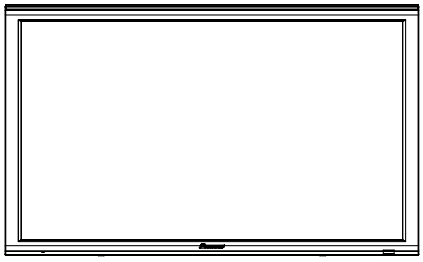
Pioneer sound.vision.soul

Service Manual



PDP-505MX

ORDER NO.
ARP3411

PLASMA DISPLAY

PDP-505MX
PDP-50FXE10

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
PDP-505MX	KUCXZC	AC 120 V	
PDP-50FXE10	TLXZC5	AC 100 to 240 V	

For details, refer to "Important Check Points for good servicing".

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936
ⓒ**PIONEER CORPORATION 2006**

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SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

SAFETY PRECAUTIONS

NOTICE : Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis.

The following precautions should be observed :

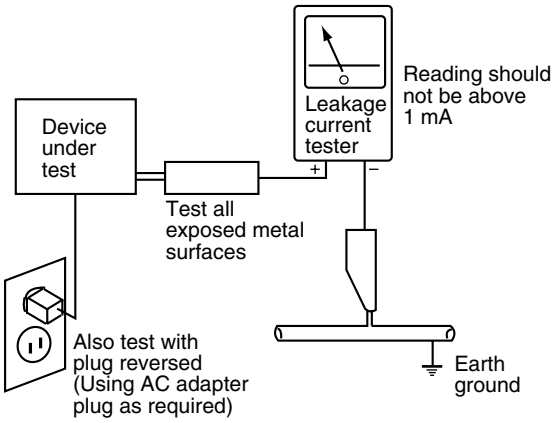
1. When service is required, even though the PDP UNIT an isolation transformer should be inserted between the power line and the set in safety before any service is performed.
2. When replacing a chassis in the set, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment covershields, isolation resistor-capacitor, etc.
3. When service is required, observe the original lead dress. Extra precaution should be taken to assure correct lead dress in the high voltage circuitry area.
4. Always use the manufacture's replacement components. Especially critical components as indicated on the circuit diagram should not be replaced by other manufacture's. Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
5. Before returning a serviced set to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the set by the manufacture has become defective, or inadvertently defeated during servicing. Therefore, the following checks should be performed for the continued protection of the customer and servicetechnician.
6. Perform the following precautions against unwanted radiation and rise in internal temperature.
   - Always return the internal wiring to the original styling.
   - Attach parts (Gascket, Ferrite Core, Ground, Rear Cover, Shield Case etc.) surely after disassembly.
7. Perform the following precautions for the PDP panel.
   - When the front case is removed, make sure nothing hits the panel face, panel corner, and panel edge (so that the glass does not break).
   - Make sure that the panel vent does not break. (Check that the cover is attached.)
   - Handle the FPC connected to the panel carefully. Twisting or pulling the FPC when connecting it to the connector will cause it to peel off from the panel.
8. Pay attention to the following.
   - Pay extreme caution when the front case and rear panel are removed because this may cause a high risk of disturbance to TVs and radios in the surrounding.

Leakage Current Cold Check

With the AC plug removed from an AC power source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester (DC 500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (input/output terminals, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of 4 MΩ.
The below 4MΩ resistor value indicate an abnormality which require corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into an AC power source (do not use an isolation transformer for this check).
Turn the AC power switch on.
Using a "Leakage Current Tester (Simpson Model 229 equivalent)", measure for current from all exposed metal parts of the cabinet (input/output terminals, screwheads, metal overlays, control shaft, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground (water pipe, conduit, etc.). Any current measured must not exceed 1mA.


Reading should not be above 1 mA
Leakage current tester
+
–
Device under test
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE SET TO THE CUSTOMER.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in PIONEER set have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.
Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire or other hazards.
Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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1. SPECIFICATIONS

[PDP-505MX/ KUCXZC]

Screen Size	1106 (H) x 622 (V) mm 43.5 (H) x 24.5 (V) inch Diagonal 50 inch
Aspect Ratio	16:09
Resolution	1036 (H) x 768 (V) pixels
Input Signals	RGB, NTSC (3.58/4.43), PAL (B,G,M,N), PAL60, SECAM
Input Terminals	INPUT1 : Mini D-sub 15-pin x 1, Audio.. stereomin jack x 1 INPUT2 : Mini D-sub 15-pin x 1, Audio.. stereomin jack x 1 INPUT3 : DVI 24-pin x 1, Audio.. stereomin jack x 1 INPUT4 : Composite.. RCA-pin x 1 : S-video.. S-video DIN 4-pin x 1 : Audio.. Stereo RCA x 2 INPUT5 : Component.. RCA-pin (Y, Pb/Cb, Pr/Cr) x 1 : Audio.. Stereo RCA x 2 RS-232C : D-sub 9-pin x 1
Sound Output	8 W + 8 W at 6 ohm
Power Supply	AC 120 V 60Hz
Current Rating	3.5 A
Standby Power Consumption	1.7 W
Dimensions	1222 (W) x 740 (H) x 96 (D) mm (Including handles)
Weight	44 kg
Environmental Considerations Operating Temperature	0 °C to 40 °C / 32 °F to 104 °F
EMI	Class B
FAN	Two Fan motors running always with power on
Integrator menu	yes
Orbiter	yes
Side mask	5 steps

Please refer to each instruction manual.
The features and specifications may be subject to change without notice.

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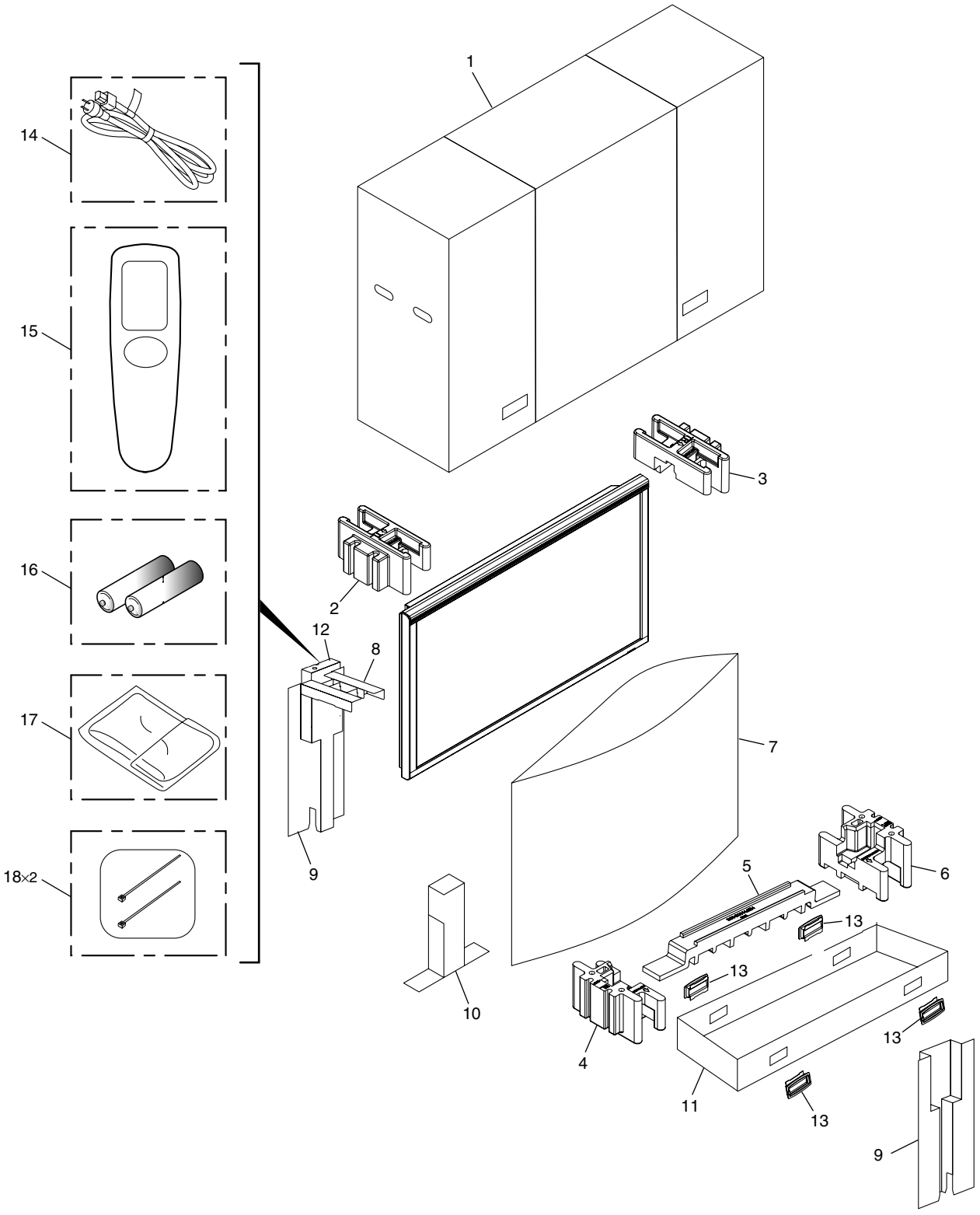
2. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

2.1 PACKING SECTION



PACKING SECTION PARTS LIST

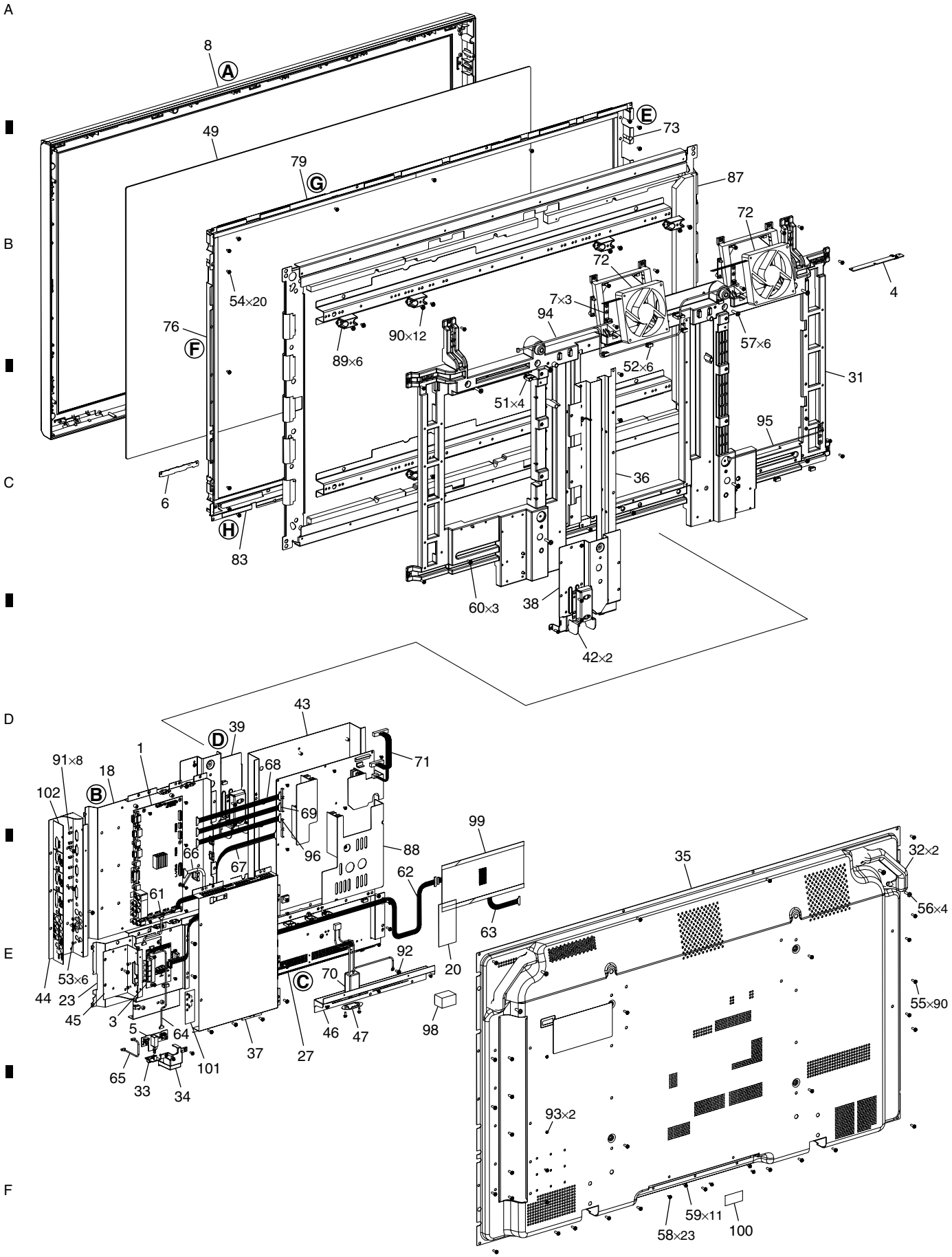
Mark	No.	Description	Part No.
	1	Carton (COVER) PH4	See Contrast table (2)
	2	EPP Form (UP-L) PH4 (HBPH4001, REV3A)	HBPH4001012
	3	EPP Form (UP-R) PH4 (HBPH4002, REV3A)	HBPH4002019
	4	EPP Form (DOWN-L) PH4 (HBPH4003, REV3A)	HBPH4003015
	5	EPP Form (DOWN-M) PH4 (HBPH4004, REV3A)	HBPH4004011
	6	EPP Form (DOWN-R) PH4 (HBPH4005, REV3A)	HBPH4005018
	7	EPE Bag (1370WX900L) PH4 (HAPH4001, REV3A)	HAPH4001011
	8	Support (UP) PH4 (HFPH4001, REV3A)	HFPH4001016
	9	Support (Front/Rear) PH4 (HFPH4002, REV3A)	HFPH4002012
	10	Support (DOWN-M) PH4 (HFPH4003, REV3A)	HFPH4003019
	11	Carton (Base) PH4 (HFPH4004, REV3A)	HFPH4004015
	12	Box (Accessory) PH4 (HEPH4001, REV3A)	HEPH4001015
	13	Carton CLASP VV3 (JXVV3001, REV3A)	JXVV3001013
⚠	14	PWR Cord	See Contrast table (2)
	15	Remote Control 7096@01-0013 (DQP-C962) LF	DQ700709610
NSP	16	Battery LR03 (K) (Alkaline, 1.5V) EP	AHDALR03138
	17	CLEAN CLOTH PH3 (JXPH3002, REV3A)	JXPH3002016
	18	CABLE TIE PH4 (EBPH4008, REV3A)	EBPH4008017

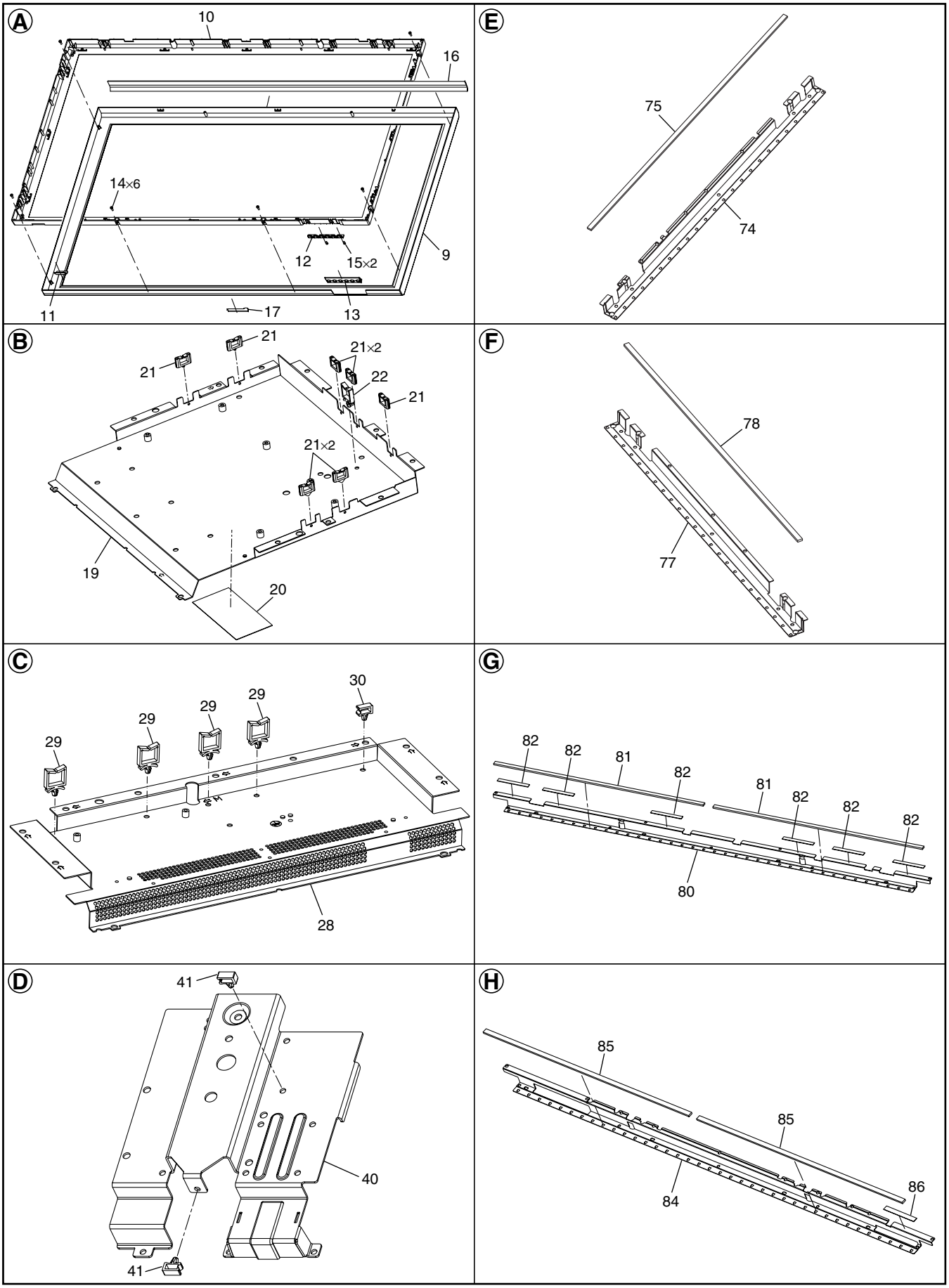
(2) CONTRAST TABLE

PDP-50FXE10/TLXZC5 and PDP-505MX/KUCXZC are constructed the same except for the following :

Mark	No.	Symbol and Description	PDP-505MX KUCXZC	PDP-50FXE10 TLXZC5
	1	Carton (COVER) PH4	HFPH4008011	HFPH4009017
⚠	14	PWR Cord US	DM333301016	Not used
⚠	14	PWR Cord ES	Not used	DM333301024

2.2 EXTERIOR SECTION

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EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.
1	PH3 M/B Assy <DVI> EU (FOR PH4) PNX	21PH3MB0059
2	PH3 BASE UNIT Assy (Pioneer)	20PH3BU0001
3	PH3 AUDIO BOARD Assy	36PH3AB0003
4	PH3 BUTTON/B Assy	33PH3BB0005
5	PH3 POWER_SW/B Assy	34PH3PB0000
6	PH3 IR/B Assy	35PH3IB0009
7	PH3 SENSOR/B Assy	3LPH3SB0001
8	PH4 FRONT COVER Assy	34PH4FC0003
9	Front Panel PH4	See Contrast table (2)
10	Sub Front PH4 (EAPH4002, REV3A)	EAPH4002018
11	Indicator PH4 (EBPH4005, REV3A)	EBPH4005018
12	Control Button PH4 (EBPH4002, REV3A)	EBPH4002019
13	Button Cover PH4	See Contrast table (2)
14	Screw T4 x 12-B (BNI)	ME40120BJ24
15	Screw T3 x 8-B (BNI)	ME30080BJ26
16	Decorator PH4	See Contrast table (2)
17	Logo Pioneer PH3 (FFPH3001, REV 3B)	FFPH3001012
18	PWB BASE MAIN Assy	36PH4PA0000
19	PWB BASE MAIN PH4 (FAPH4012, REV3A)	FAPH4012013
20	Barrier PS PH4 (FCPH4004, REV3A)	FCPH4004012
21	Cable Clip (19 x 12) PH3 (EBPH3010, REV 3A)	EBPH3010018
22	Cable Clip (21 x 17) PH3 (EBPH3014, REV 3A)	EBPH3014013
23	PH4 PWB BASE SUB Assy	37PH4PA0001
24	PWB BASE SUB PH4 (FAPH4013, REV3A)	FAPH4013010
25	Cable Clip (21 x 17) PH3 (EBPH3014, REV 3A)	EBPH3014013
26	Cable Clip (14 x 8) PH3 (EBPH3011, REV 3A)	EBPH3011014
27	PH4 Shield Bottom Assy	38PH4SB0001
28	Shield Bottom PH4 (FAPH4007, REV3A)	FAPH4007010
29	Cable Clip (21 x 17) PH3 (EBPH3014, REV 3A)	EBPH3014013
30	Cable Clip (14 x 8) PH3 (EBPH3011, REV 3A)	EBPH3011014
31	Frame PH4 (EAPH4003, REV3A)	EAPH4003014
32	Handle PH4 (EAPH4004, REV3A)	EAPH4004011
33	Power Button PH4 (EBPH4003, REV3A)	EBPH4003015
34	P/B Cover PH4 (EBPH4004, REV3A)	EBPH4004011
35	Rear Cover PH4 (FAPH4001, REV3A)	FAPH4001011
36	Shield Center PH4 (FAPH4006, REV3B)	FAPH4006013
37	Shield Main PH4 (FAPH4008, REV3A)	FAPH4008016
38	Plane R PH4 (FAPH4009, REV3A)	FAPH4009012
39	PH4 Plane L Assy	3KPH4PA0005
40	Plane L PH4 (FAPH4010, REV3A)	FAPH4010011
41	Cable Clip (14 x 8) PH3 (EBPH3011, REV 3A)	EBPH3011014
42	Stand Bracket PH4 (FAPH4011, REV3A)	FAPH4011017
43	HITACHI PS Bracket PH4 (FAPH4017, REV3A)	FAPH4017015
44	Terminal Panel M PH4 (FBPH4001, REV3C)	FBPH4001012
45	Terminal Panel S PH4 (FBPH4002, REV3A)	FBPH4002019
46	Terminal Panel B PH4 (FBPH4003, REV3C)	FBPH4003015
47	Barrier PH4 (FCPH4003, REV3A)	FCPH4003016
48	Barrier PS PH4 (FCPH4004, REV3A)	FCPH4004012
49	Glass Filter (50") PH4 (JXPH4001, REV3A)	JXPH4001013
50	Cable Clip (27 x 10) PH3 (EBPH3012, REV 3B)	EBPH3012011
51	Cable Clip (21 x 17) PH3 (EBPH3014, REV 3A)	EBPH3014013
52	Cable Clip (14 x 8) PH3 (EBPH3011, REV 3A)	EBPH3011014
53	Screw T3 x 8-B (BNI)	ME30080BJ26
54	Screw T4 x 8-B (BNI)	ME40080BJ28
55	Screw T4 x 12-B (BNI)	ME40120BJ24
56	Screw T5 x 16-B (BNI)	ME50160BJ24
57	Screw T5 x 20-B (NI)	ME50200BBJ9
58	Screw M3 x 7-P (BNI)	MS30070PBS7
59	Screw M3 x 10-P (BNI)	MS30100PBB0
60	Screw M4 x 12-P (BNI)	MS40120PBC9
61	Cable Assy PH4 Audio A (11P/11P, 2A) EU	DD0PH4AB003
62	Cable Assy PH4 Button A (8P/7P, 2A) EU	DD0PH4TH005
63	Cable Assy PH4 Button B (7P/7P, 2A) EU	DD0PH4TH102
64	Cable Assy PH4 Switch (9P/9P, 2A) EU	DD0PH4PI000
65	Cable Assy PH4 LED (5P/5P, 2A) EU	DD0PH4LD001

Mark	No.	Description	Part No.
	66	Cable Assy PH4 LVDS (31P/40P, 2A) 2R EU	DD0PH4TH200
	67	Cable Assy PH4 Audio Power (6P/7P, 2A) EU	DD0PH4AB208
	68	Cable Assy PH4 Power PV (8P/8P, 2A) EU	DD0PH4PB005
	69	Cable Assy PH4 Power PM (7P/6P, 2A) EU	DD0PH4PB102
⚠	70	Cable Assy PH4 AC Inlet (3P/3P, 2A) EU	DD0PH4TH501
	71	Cable Assy PH3 Power PD+PH (14P/14P, 2A) EU	DD0PH3PB507
	72	DC Fan 12V (119 x 119 x 40) AFB1212L-5G88 EP	DQ5DC11J1A2
	73	PH4 Filter Bracket L Assy	3FPH4FA0012
	74	Bracket Filter L PH4 (FAPH4002, REV3A)	FAPH4002018
	75	Cushion 654 PH4 (GBPH4002, REV3A)	GBPH4002019
	76	PH4 Filter Bracket R Assy	3FPH4FA0004
	77	Bracket Filter R PH4 (FAPH4005, REV3A)	FAPH4005017
	78	Cushion 654 PH4 (GBPH4002, REV3A)	GBPH4002019
	79	PH4 Filter Bracket T Assy	3FPH4FA0021
	80	Bracket Filter T PH4 (FAPH4003, REV3B)	FAPH4003014
	81	Cushion 580 PH4 (GBPH4001, REV3A)	GBPH4001012
	82	Gasket (85 x 10 x 1) PH4 (GBPH4003, REV3A)	GBPH4003015
	83	PH4 Filter Bracket B Assy	3FPH4FA0039
	84	Bracket Filter B PH4 (FAPH4004, REV3B)	FAPH4004011
	85	Cushion 580 PH4 (GBPH4001, REV3A)	GBPH4001012
	86	Gasket (85 x 10 x 1) PH4 (GBPH4003, REV3A)	GBPH4003015
	87	PDP Service Module Assy	9S900155
⚠	88	PWR 690W ,PS-251 (AC85~276V) EU	AF690B00001
	89	MD Spacer PH4 (EBPH4006, REV 3A)	EBPH4006014
	90	Screw M4 x 10-P (NI)	MS40100PBL1
	91	IO Nut PH3 (MBPH3001, REV 3A)	MBPH3001019
	92	Screw M4 x 8 B (BNI)	MM40080BK40
	93	Screw M3 x 3-P (BNI)	MS30030PBM8
	94	Cable Assy PH4 Sensor A+B (6P/2P, 2A) EU	DD0PH4TH307
	95	Cable Assy PH4 Sensor C (3P/1P, 2A) EU	DD0PH4TH404
	96	Cable Assy PH4 Power PN (12P/4P, 2A) EU	DD0PH4PB200
	97	EMI Ferrite Core K5B RC 26 x 30 x 13-MG EP.	CW0K5BRC204
	98	Gasket Sponge B PH4 (GBPH4006, REV3A)	GBPH4006014
	99	Mesh (235 x 115 x 0.4) PH4 (FCPH4005, REV3B)	FCPH4005019
	100	Caution Label (AC) PH4 (HCPH4004, REV3A)	HCPH4004012
	101	Audio Label PH4 (HCPH4001, REV3A)	HCPH4001013
	102	Terminal (DVI) Label PH4 (HCPH4003, REV3A)	HCPH4003016

(2) CONTRAST TABLE

PDP-50FXE10/TLXZC5 and PDP-505MX/KUCXZC are constructed the same except for the following :

Mark	No.	Symbol and Description	PDP-505MX KUCXZC	PDP-50FXE10 TLXZC5
	9	Front Panel (BK) PH4	EAPH4001020	Not used
	9	Front Panel PH3	Not used	EAPH4001011
	13	Button Cover (SR) PH4	EBPH4001021	EBPH4001012
	16	Decorator (BK) PH4	EAPH4005025	Not used
	16	Decorator (SR) PH4	Not used	EAPH4005017

2.3 PDP SERVICE MODULE ASSY PARTS LIST

NP50X6MF01QB (9S900155)

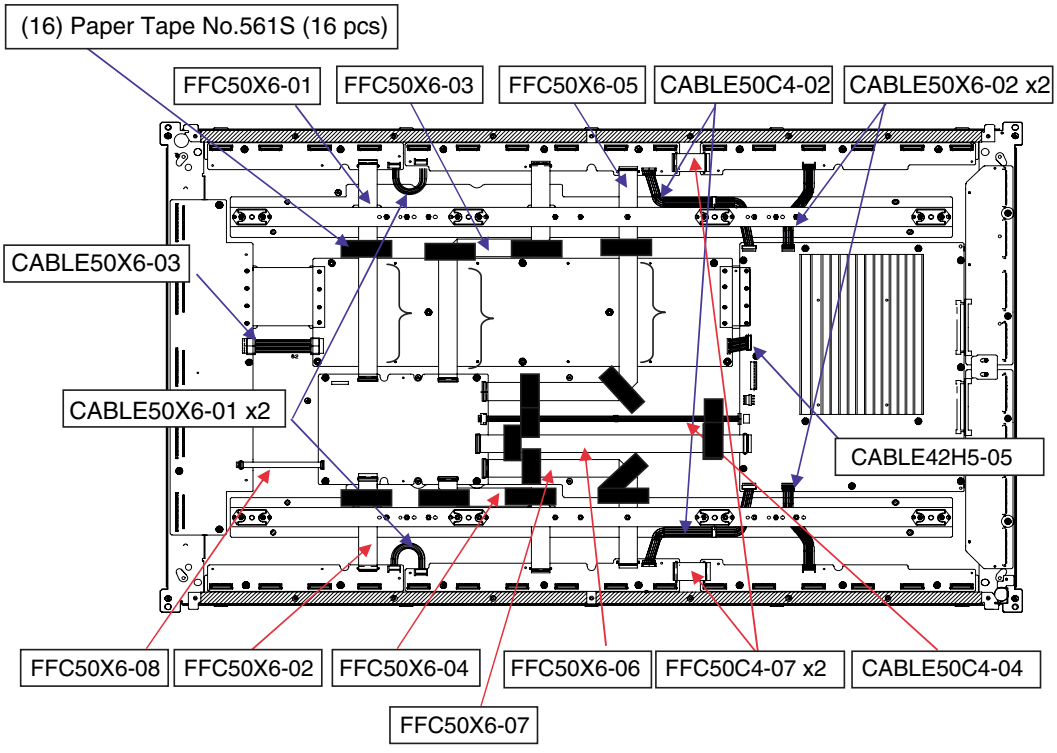
Upper compatible if no terms.

Name of Package(board)	Version	Replaceable Version	Conditions	Note
High Voltage Board PKG50X6G1	03B	03B		**Refer to "Page 104".**
Common Connection Board PKG50X6E4	01A	01A/02A		
	02A			
Scan Relay Board (Up) PKG50X6E2	01A	01A/02A		
	02A			
Scan Relay Board (Down) PKG50X6E1	01A	01A/02A		
	02A			
Scan Relay Board (Center) PKG42H5E3/PKG50X6E3	01A	01A/02A		
	02A			
Data Relay Board (Left Up) PKG50X6J1	01A	01A/02A		
	02A			
Data Relay Board (Center Up) PKG50X6J2	01A	01A/02A		
	02A			
Data Relay Board (Right Up) PKG50X6J3	01A	01A/02A		
	02A			
Data Relay Board (Left Down) PKG50X6J4	01A	01A/02A		
	02A			
Data Relay Board (CenterDown) PKG50X6J5	01A	01A/02A		
	02A			
Data Relay Board (Right Down) PKG50X6J6	01A	01A/02A		
	02A			
Common Relay Board PKG50X6E5	01A	01A/02A		
	02A			
Digital Board PKG50X6C1	04D-07	04D-07		

PARTS LIST

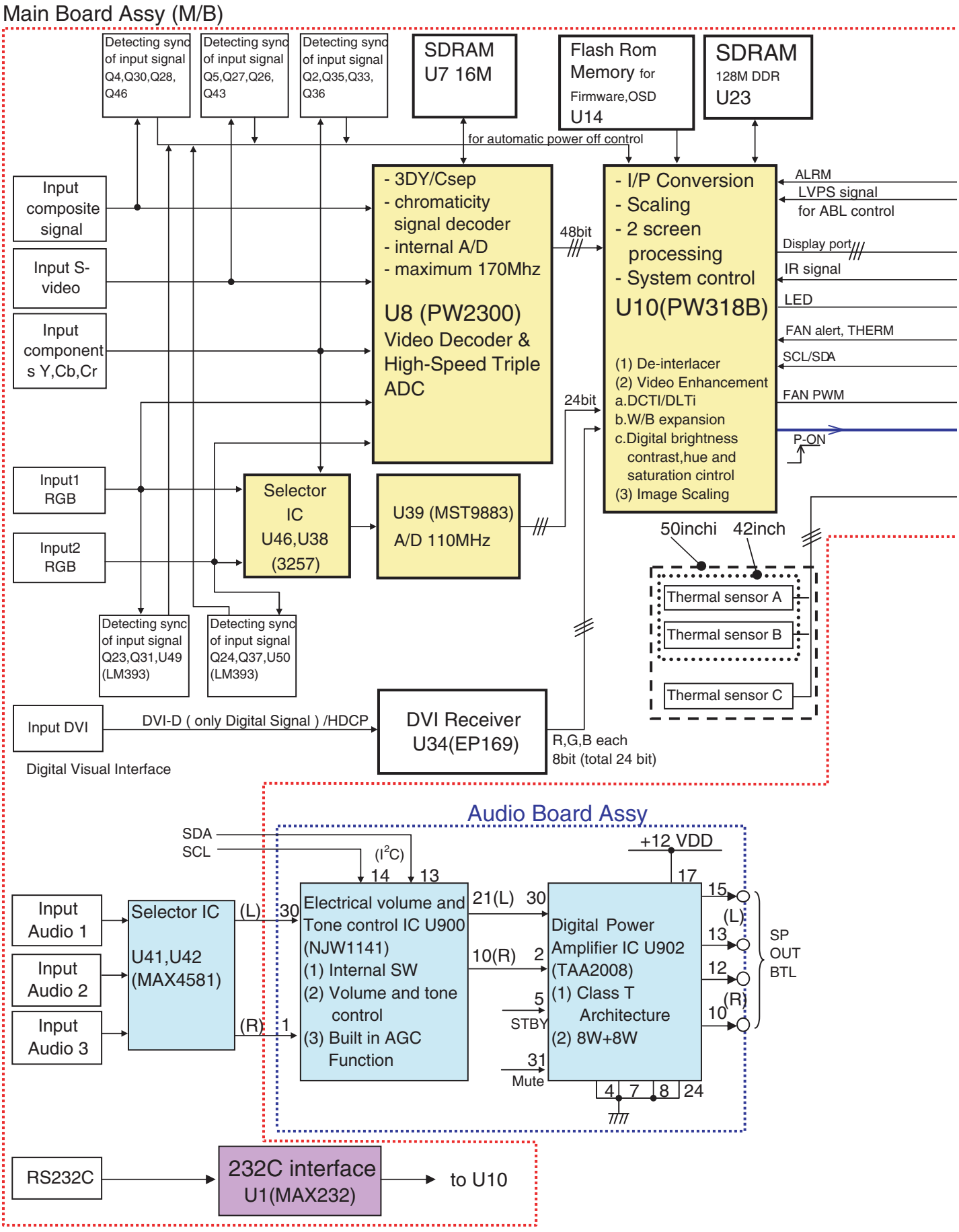
NP50X6MF01QB

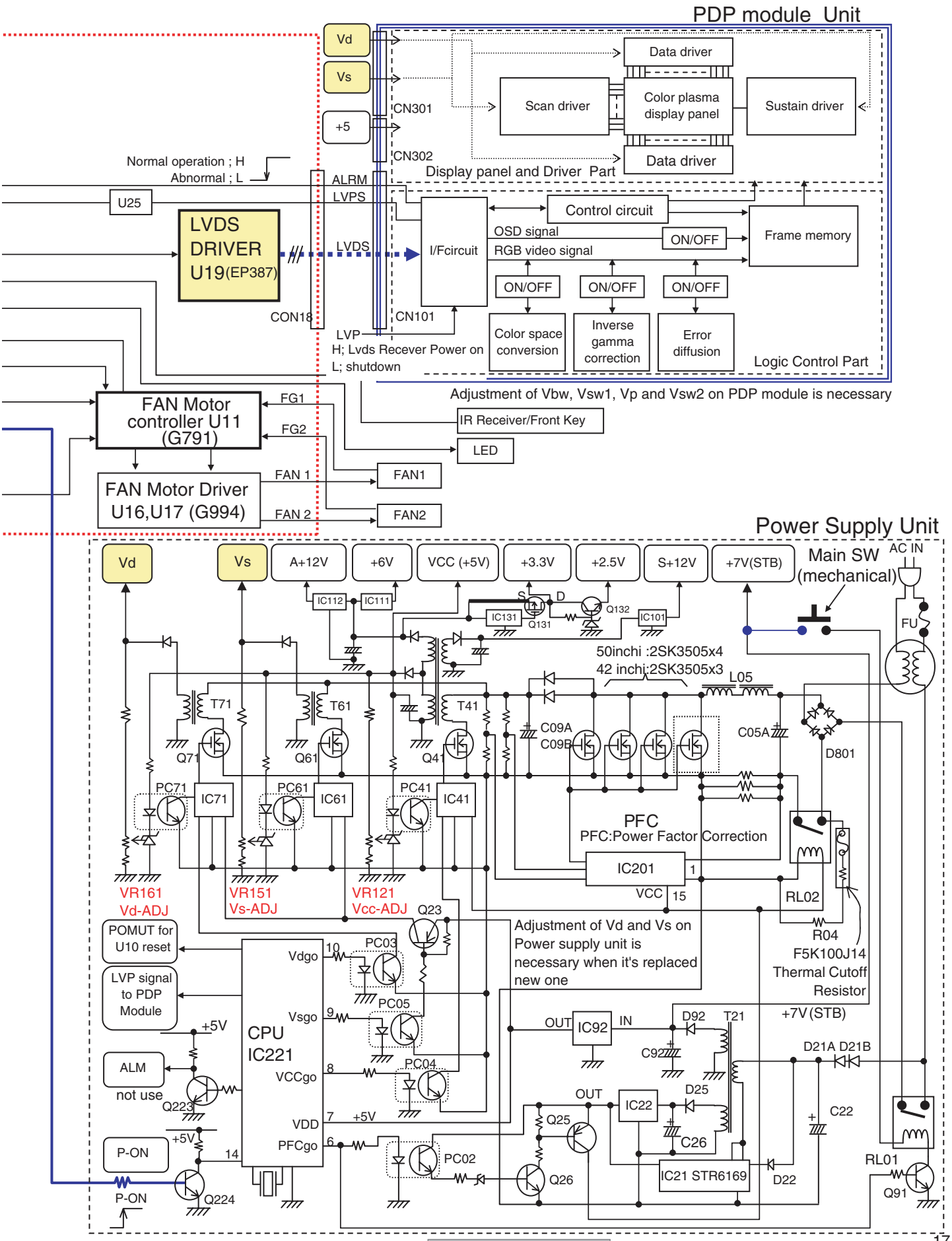
SYMBOL	PART NAME		PART NO	QTY	NOTE
	TYPE NAME	VERSION			
1	PKG50X6G1	03B	9S899890	1	High Voltage Board
2	PKG50X6E2	02A	9S899926	1	Scan Relay Board (Up)
3	PKG50X6E1	02A	9S899927	1	Scan Relay Board (Down)
4	PKG50X6J1	02A	9S899883	1	Scan Relay Board (Left Up)
5	PKG50X6J2	02A	9S899884	1	Scan Relay Board (Center Up)
6	PKG50X6J3	02A	9S899885	1	Scan Relay Board (Right Up)
7	PKG50X6J4	02A	9S899886	1	Scan Relay Board (Left Down)
8	PKG50X6J5	02A	9S899887	1	Scan Relay Board (Center Down)
9	PKG50X6J6	02A	9S899888	1	Scan Relay Board (Right Down)
10	PKG50X6E4	02A	9S899925	1	Common Connection Board
11	PKG50X6E5	02A	9S899997	1	Common Relay Board
12	PKG50X6C1	04D-07	9S890005	1	Digital Board
13	PKG42H5E3/50X6E3	01A	9S899829	1	Scan Relay Board(Center)
	PKG42H5E3/50X6E3	02A	9S899899	1	
14	FFC50X6-01	-	9S500004	1	Refer to the below figure
15	FFC50X6-02	-	9S500005	1	Refer to the below figure
16	FFC50X6-03	-	9S500028	1	Refer to the below figure
17	FFC50X6-04	-	9S500029	1	Refer to the below figure
18	FFC50X6-05	-	9S500030	1	Refer to the below figure
19	FFC50X6-06	-	9S500031	1	Refer to the below figure
20	FFC50X6-07	-	9S500032	1	Refer to the below figure
21	FFC50X6-08	-	9S500033	1	Refer to the below figure
22	FFC50C4-07	-	9S500012	2	Refer to the below figure
23	CABLE50X6-01	-	9S600005	2	Refer to the below figure
24	CABLE50C4-02	-	9S600006	2	Refer to the below figure
25	CABLE50X6-02	-	9S600007	2	Refer to the below figure
26	CABLE50C4-04	-	9S600022	1	Refer to the below figure
27	Paper Tape No.561S	-	9S700002	1	



3. BLOCK DIAGRAM

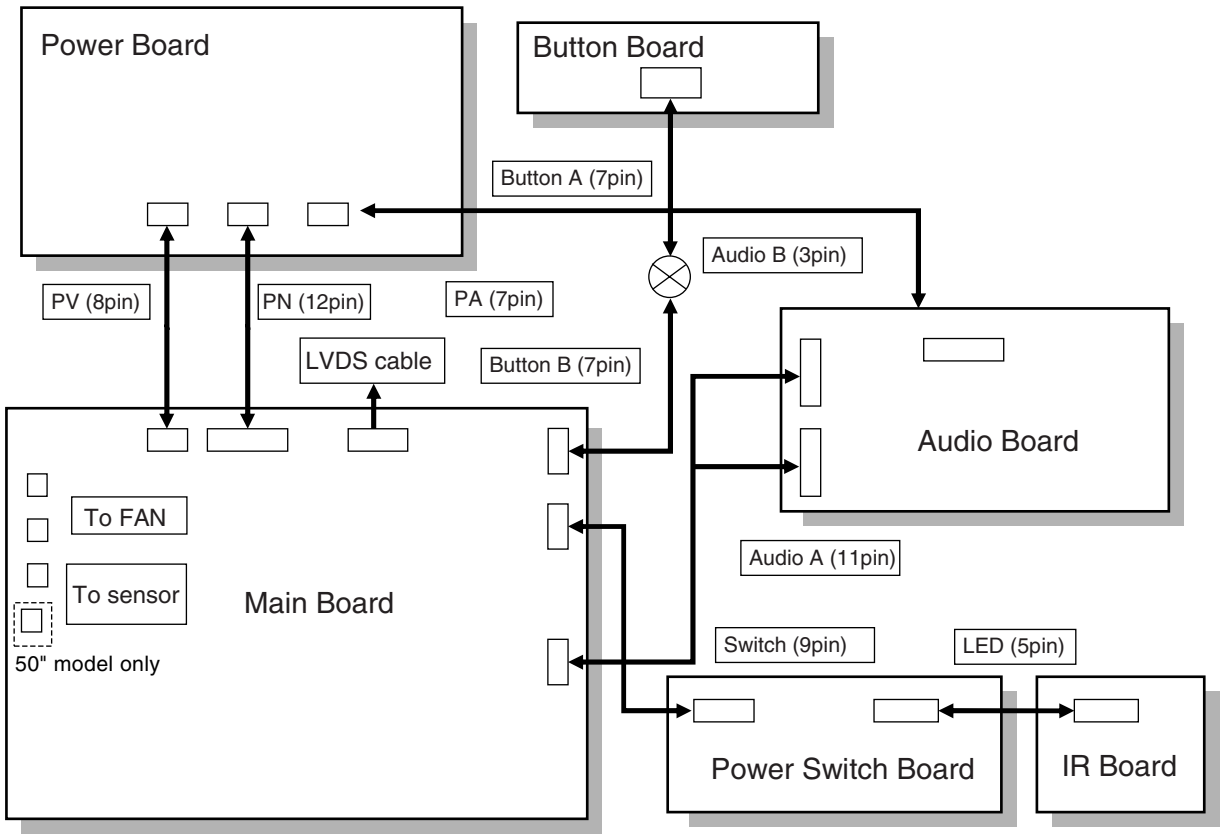
3.1 OVEALL BLOCK DIAGRAM




PDP module Unit
Vd
Vs
+5
CN301
CN302
Data driver
Scan driver
Color plasma display panel
Sustain driver
Data driver
Display panel and Driver Part
Normal operation ; H
Abnormal ; L
ALRM
LVPS
U25
LVDS DRIVER U19(EP387)
LVDS
I/Fcircuit
Control circuit
OSD signal
RGB video signal
ON/OFF
Frame memory
ON/OFF
ON/OFF
ON/OFF
CON18
CN101
LVP
H; Lvds Recever Power on
L; shutdown
Color space conversion
Inverse gamma correction
Error diffusion
Logic Control Part
Adjustment of Vbw, Vsw1, Vp and Vsw2 on PDP module is necessary
FAN Motor controller U11 (G791)
FG1
FG2
IR Receiver/Front Key
LED
FAN Motor Driver U16,U17 (G994)
FAN 1
FAN 2
FAN1
FAN2
Power Supply Unit
Vd
Vs
A+12V
+6V
VCC (+5V)
+3.3V
+2.5V
S+12V
+7V(STB)
Main SW (mechanical)
AC IN
FU
IC112
IC111
IC131
Q131
Q132
IC101
50inchi :2SK3505x4
42 inchi:2SK3505x3
L05
T71
T61
T41
Q71
Q61
Q41
C09A
C09B
C05A
D801
PC71
IC71
PC61
IC61
PC41
IC41
PFC
PFC:Power Factor Correction
IC201
VCC
15
RL02
R04
F5K100J14
Thermal Cutoff
Resistor
VR161
Vd-ADJ
VR151
Vs-ADJ
VR121
Vcc-ADJ
Q23
Adjustment of Vd and Vs on Power supply unit is necessary when it's replaced new one
POMUT for U10 reset
LVP signal to PDP Module
CPU IC221
Vdgo
Vsgo
VCCgo
VDD
PFCgo
PC03
PC05
PC04
PC02
+5V
ALM
not use
Q223
P-ON
Q224
OUT
IC92
IN
D92
T21
C92
+7V (STB)
D21A D21B
OUT
IC22
D25
C26
C22
Q25
Q26
IC21 STR6169
D22
RL01
Q91

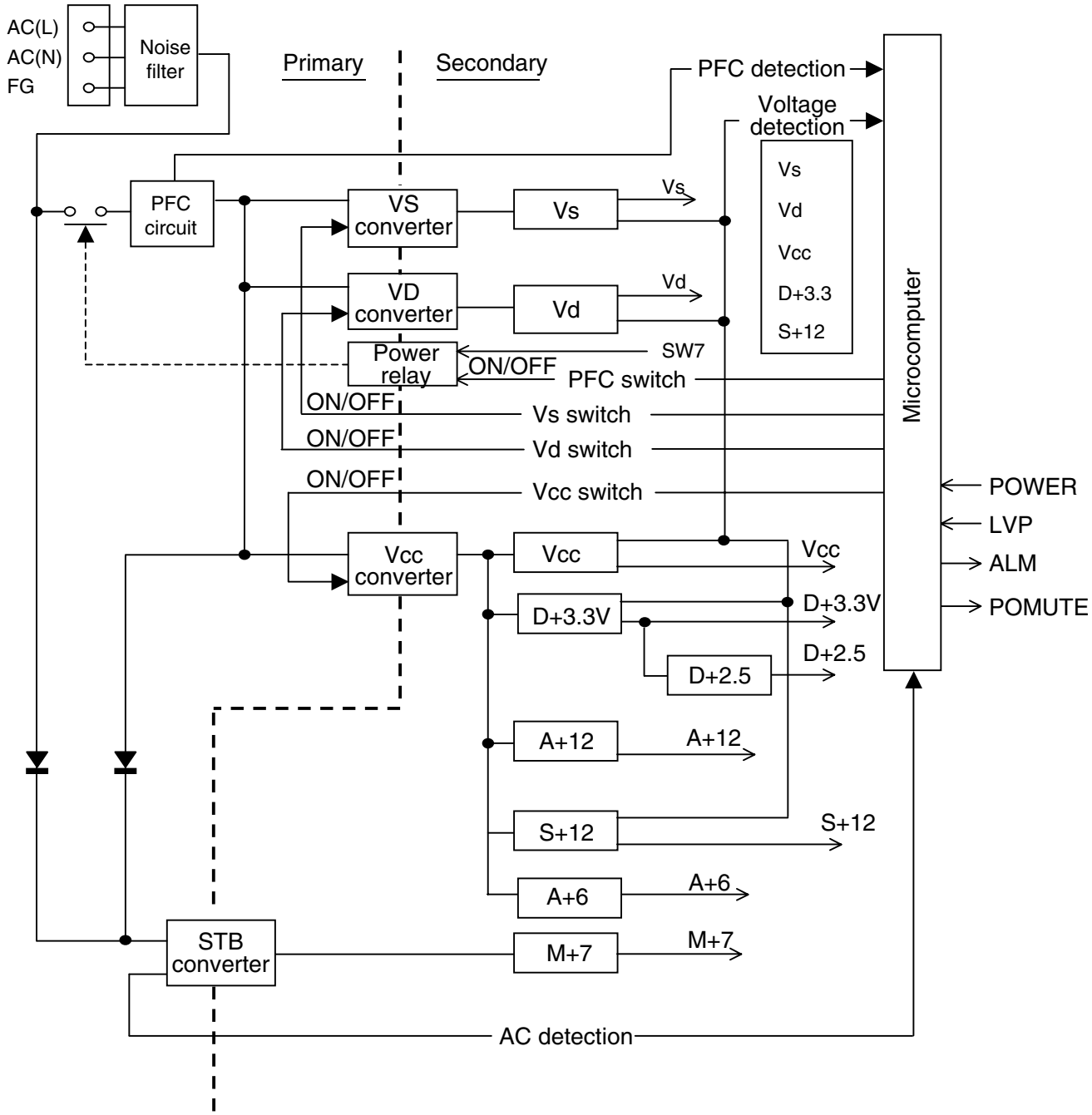
3.2 SYSTEM BLOCK DIAGRAM

● System Block and Wiring Diagram



3.3 PS251 PWR BLOCK DIAGRAM

● PS251 PWR 690W Block Diagram



3.4 BLOCK DIAGRAM OPERATION EXPLANATION

• DESCRIPTION OF OPERATIONS IN EACH BLOCK (PDP-42FX10, -50FX10, -425MX, AND -505MX)

1. Processing of video signals

There are three types (composite, S-video, and component) of video input signals in this system. For the PC system, two RGB terminals (D-SUB, 15-pin) are provided. The DVI input terminal is not provided for the Japanese model.
All video signals are input to the U8 Single-Chip Signal-Processing IC. With U8, video signals undergo 3-D Y/C separation, and the chroma signals are A/D-converted. U39 is an A/D converter for a two-picture display. Video signals selected at U46 and U38 are A/D-converted at U39 for the sublevel screen. A digital video signal that is A/D-converted at U39 is sent to the U10 Image Processing IC for I/P conversion and scaling. Besides signal processing, U10 also performs system controls, such as control of each IC, processing of signals from the remote control unit, power on/off, and function control. The program for U10 is stored in the U14 Flash-Memory IC.
Video signals processed at U10 are sent to the U19 Driver IC for the LVDS Interface. The LVDS signal is then sent from U19 to the PDP module in order to be processed into a picture. The Auto Brightness Level (ABL) is controlled at U10 by using the LVPS signal returned from the PDP module to U10.

2. Detection of the input video sync signal

The input video sync signal is detected by the detection circuit and used for the automatic power-off function. The automatic input selection and automatic power-off functions, two of the features of this product, are enabled by U10's judging the presence/absence of video sync signals. The presence of the video sync signal is observed at all video input terminals even in Standby mode. In a system with the automatic power-off function activated, the power is turned off if no input signal is input to any of the video input terminals. The LED on the front panel lights in red. If a video signal is reinput under such a condition to any of the video input terminals, U10 issues a power-on command to the Power Assy. Then, the power is turned on.

3. FAN motors

The rotation speed of the two fan motors is controlled in three steps (low, medium, high) according to signals from the temperature sensors (2 for the 42-inch model, 3 for the 50-inch model) and by U10 via the U11 Control IC.
If the temperature at the temperature sensors rises to an abnormally high level, U10 orders a shutdown (S/D) of the unit. The LED on the front panel flashes in red if the unit is shut down because of an internal temperature rise. If the rotation of the fan motors is blocked mechanically, the unit is shut off, and the LED on the front panel flashes in green.
For a 50-inch model, besides fan motor control, the three temperature sensors are used for detecting the installation orientation of the PDP. If the PDP is installed 90° from normal, this installation position is detected by a difference in temperatures at three sensors, and the display mode of the OSD is changed accordingly.

4. Audio section

There are three audio inputs: (Audio-1, RGB-1), (Audio-2, RGB-2), and (Audio-3, RGB-3). The U41 and U42 Selector ICs select an audio signal. The selected audio signal is controlled for electronic volume and tone at U900 and is then sent to the U902 Digital Power Amplifier.

5. RS-232C terminal

The RS-232C terminal is used for connecting a PC for upgrading of the firmware and external control of this unit. The external control commands and protocols are the same as those for the CMX series. The signal from the RS-232C terminal is sent to U10, via the U1 RS-232C Interface. For upgrading of U10, a special software program is required, because the processing procedures are different from those for the Office Vision System and CMX series.

6. POWER SUPPLY Unit

The P-ON signal from U10 is sent to IC221 on the POWER SUPPLY Unit. Then the power relay is triggered and various voltages are generated. IC221 starts operating by receiving Standby voltage (+7 V) via the Main Power switch. With the Main Power switch set to ON, if the Power key on the remote control unit is pressed the signal received at the infrared receiver is sent to U10. Then the power-on signal is sent from U10 to IC221 on the POWER SUPPLY Unit, which will trigger the power relays RL01 and RL02. Then the Power Assy starts operating.
After replacement of the POWER SUPPLY Unit or PDP module, the Vs and Vd voltages of the POWER SUPPLY Unit must be adjusted to the values that are written on the label attached to the PDP module. This is because the Vbw, Vsw1, Vp and Vsw2 voltages of the PDP module are produced from Vs and Vd voltages supplied from the POWER SUPPLY Unit.
The alarm signal from IC221 on the Power Assy, although indicated in the block diagram, is not available.

A

B

C

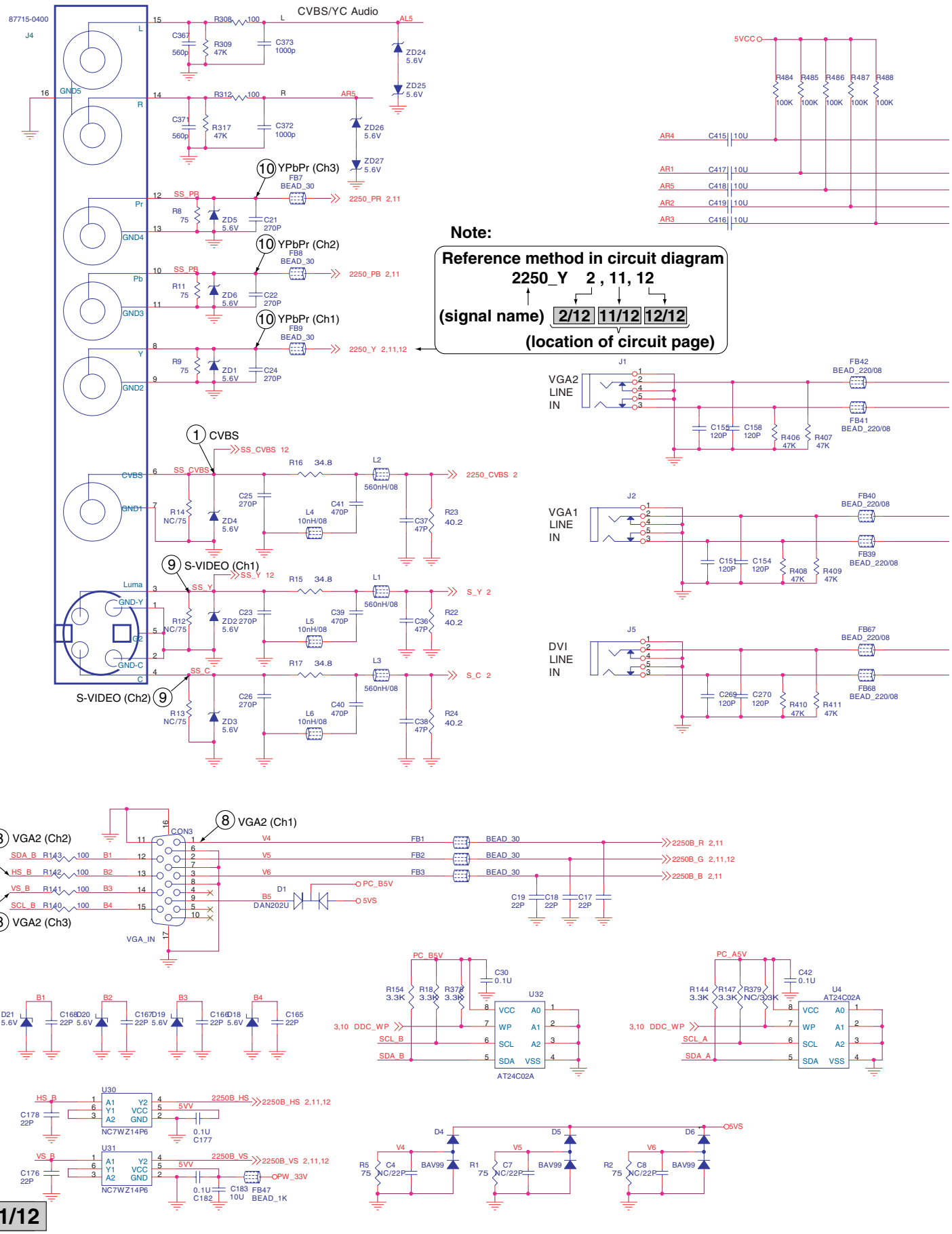
D

E

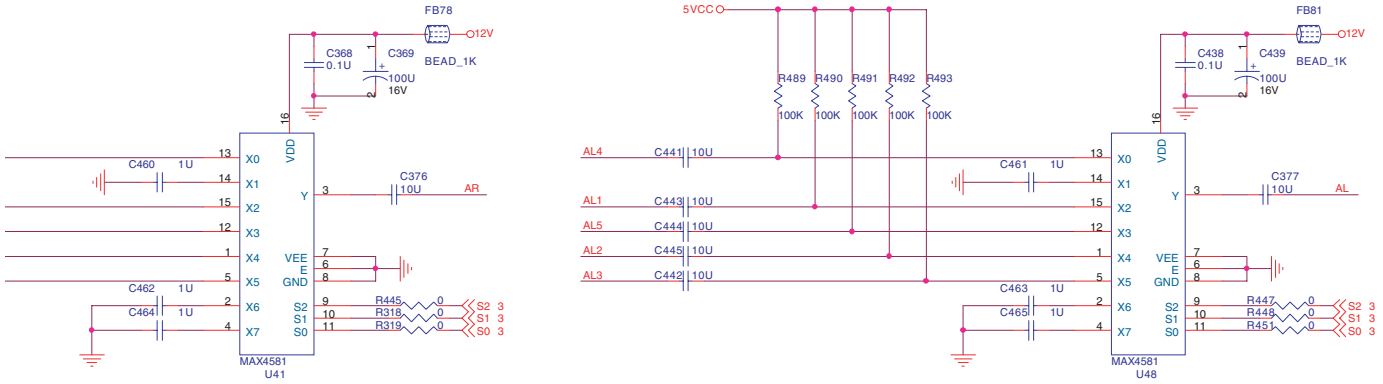
F

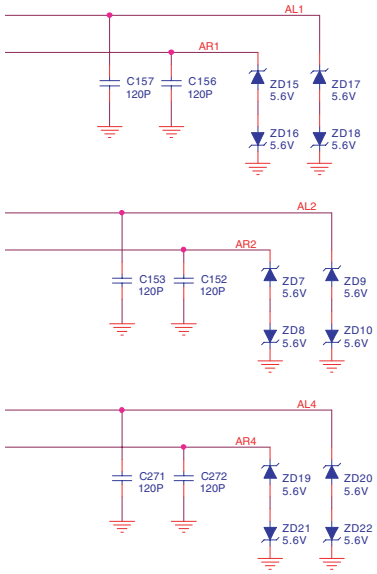
3.5 SCHEMATIC DIAGRAM

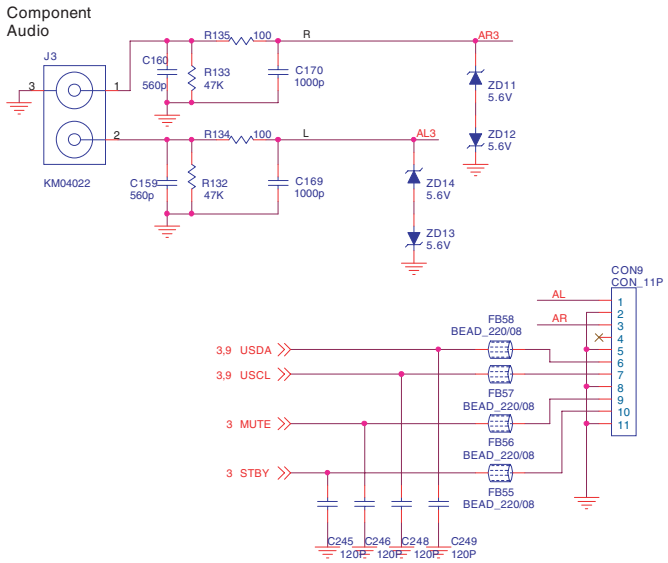
• AV INPUT

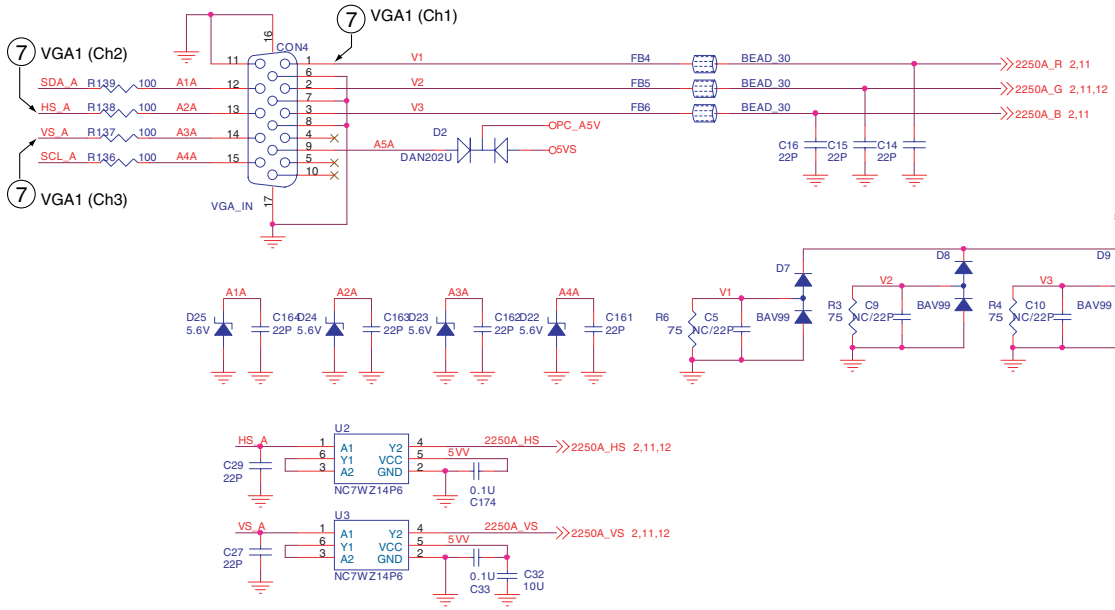


1/12

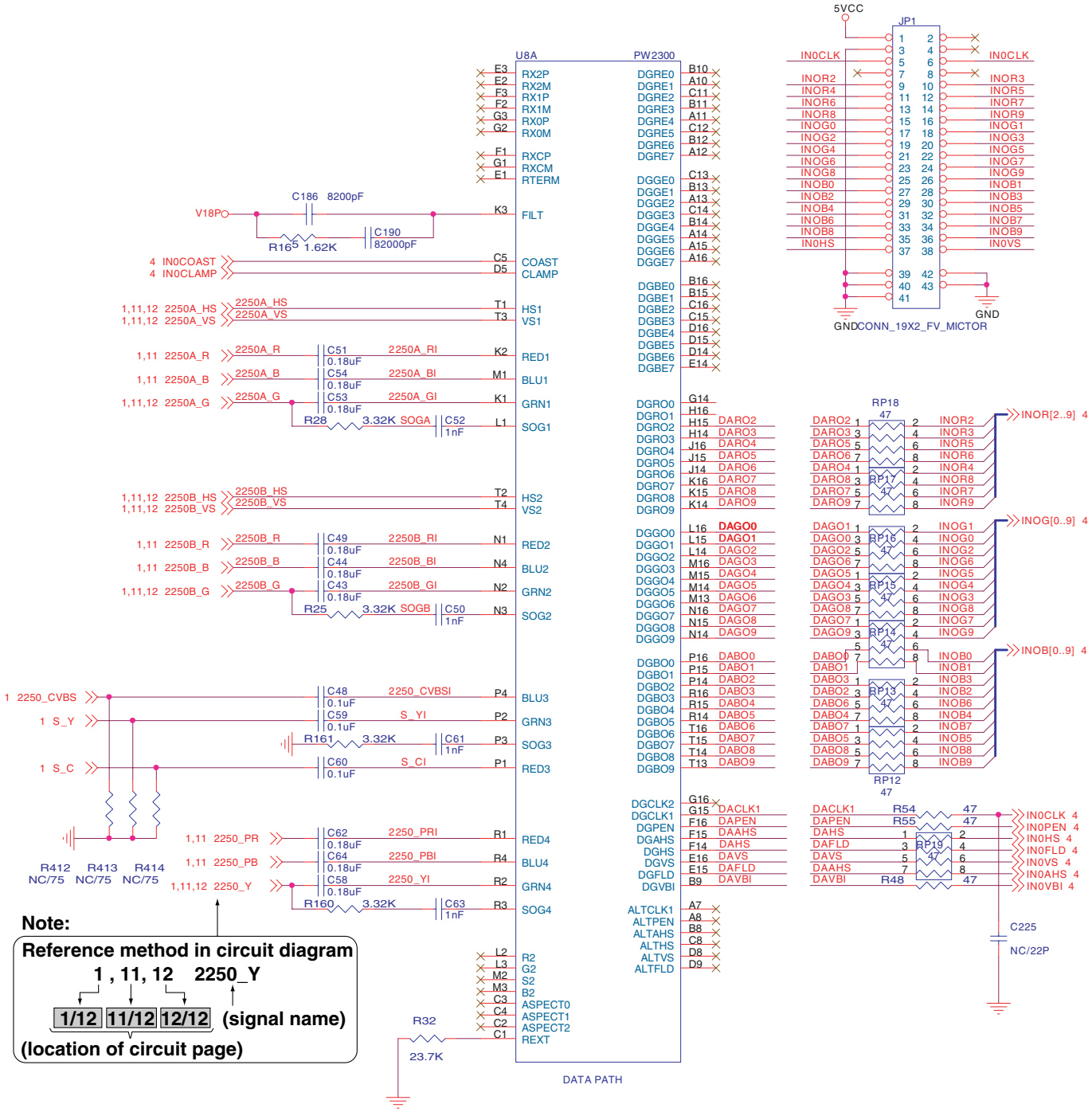

FB78
12V
C368 0.1U
C369 100U 16V
BEAD_1K
MAX4581
U41
C460 1U
C462 1U
C464 1U
C376 10U
AR
R445 0
R318 0
R319 0
S2 3
S1 3
S0 3
5VCC
R489 100K
R490 100K
R491 100K
R492 100K
R493 100K
AL4 C441 10U
AL1 C443 10U
AL5 C444 10U
AL2 C445 10U
AL3 C442 10U
FB81
C438 0.1U
C439 100U 16V
C461 1U
C463 1U
C465 1U
C377 10U
AL
R447 0
R448 0
R451 0
MAX4581
U48


AL1
AR1
C157 120P
C156 120P
ZD15 5.6V
ZD17 5.6V
ZD16 5.6V
ZD18 5.6V
AL2
AR2
C153 120P
C152 120P
ZD7 5.6V
ZD9 5.6V
ZD8 5.6V
ZD10 5.6V
AL4
AR4
C271 120P
C272 120P
ZD19 5.6V
ZD20 5.6V
ZD21 5.6V
ZD22 5.6V


Component
Audio
J3
KM04022
R135 100
R
AR3
C160 560p
R133 47K
C170 1000p
ZD11 5.6V
ZD12 5.6V
R134 100
L
AL3
C159 560p
R132 47K
C169 1000p
ZD14 5.6V
ZD13 5.6V
CON9
CON_11P
AL
AR
FB58 BEAD_220/08
FB57 BEAD_220/08
FB56 BEAD_220/08
FB55 BEAD_220/08
3,9 USDA
3,9 USCL
3 MUTE
3 STBY
C245 120P
C246 120P
C248 120P
C249 120P


7 VGA1 (Ch1)
7 VGA1 (Ch2)
7 VGA1 (Ch3)
CON4
VGA_IN
SDA_A R139 100 A1A
HS_A R138 100 A2A
VS_A R137 100 A3A
SCL_A R136 100 A4A
V1
V2
V3
A5A
D2
DAN202U
OPC_A5V
5VS
FB4
FB5
FB6
BEAD_30
2250A_R 2,11
2250A_G 2,11,12
2250A_B 2,11
C16 22P
C15 22P
C14 22P
A1A
A2A
A3A
A4A
D25 5.6V
D24 5.6V
D23 5.6V
D22 5.6V
C164 22P
C163 22P
C162 22P
C161 22P
D7
D8
D9
R6 75
R3 75
R4 75
C5 NC/22P
C9 NC/22P
C10 NC/22P
BAV99
U2
U3
HS_A
VS_A
C29 22P
C27 22P
NC7WZ14P6
2250A_HS
2250A_VS
2250A_HS 2,11,12
2250A_VS 2,11,12
5VV
0.1U C174
0.1U C33
C32 10U

• PW2300


U8A
PW2300
5VCC
JP1
CONN_19X2_FV_MICTOR
GND
DATA PATH
RX2P
RX2M
RX1P
RX1M
RX0P
RX0M
RXCP
RXCM
RTERM
FILT
COAST
CLAMP
HS1
VS1
RED1
BLU1
GRN1
SOG1
HS2
VS2
RED2
BLU2
GRN2
SOG2
BLU3
GRN3
SOG3
RED3
RED4
BLU4
GRN4
SOG4
ASPECT0
ASPECT1
ASPECT2
REXT
R32
23.7K
C186 8200pF
R165 1.62K
C190 82000pF
V18P
IN0COAST
IN0CLAMP
2250A_HS
2250A_VS
2250B_HS
2250B_VS
2250_CVBS
S_Y
S_C
2250_PR
2250_PB
2250_Y
R412 NC/75
R413 NC/75
R414 NC/75
RP18
RP17
RP16
RP15
RP14
RP13
RP12
RP19
INOR[2..9]
INOG[0..9]
INOB[0..9]
IN0CLK
IN0OPEN
IN0HS
IN0FLD
IN0VS
IN0AHS
IN0VBI
C225
NC/22P
Note:
Reference method in circuit diagram
1 , 11, 12 2250_Y
1/12 11/12 12/12 (signal name)
(location of circuit page)

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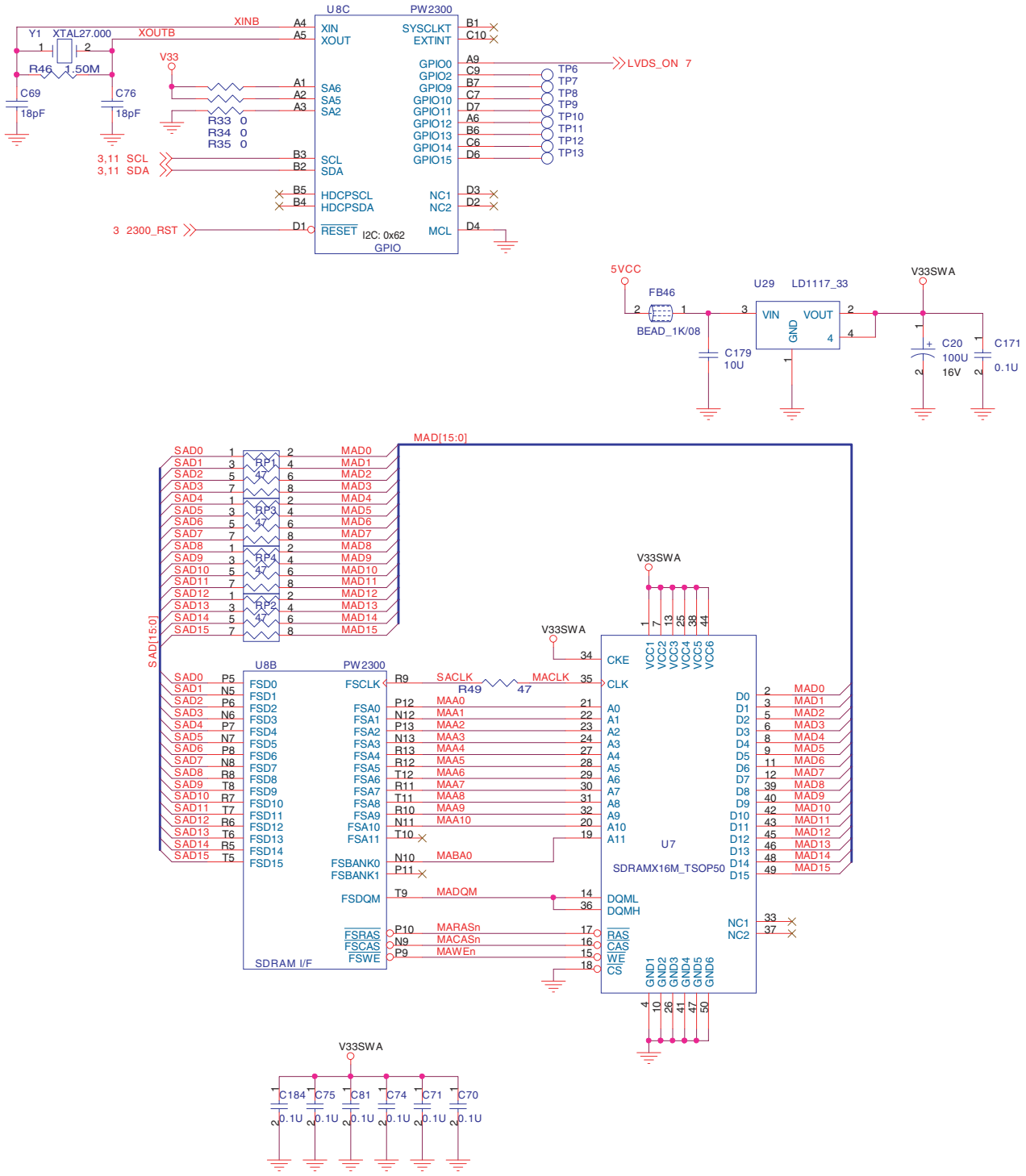
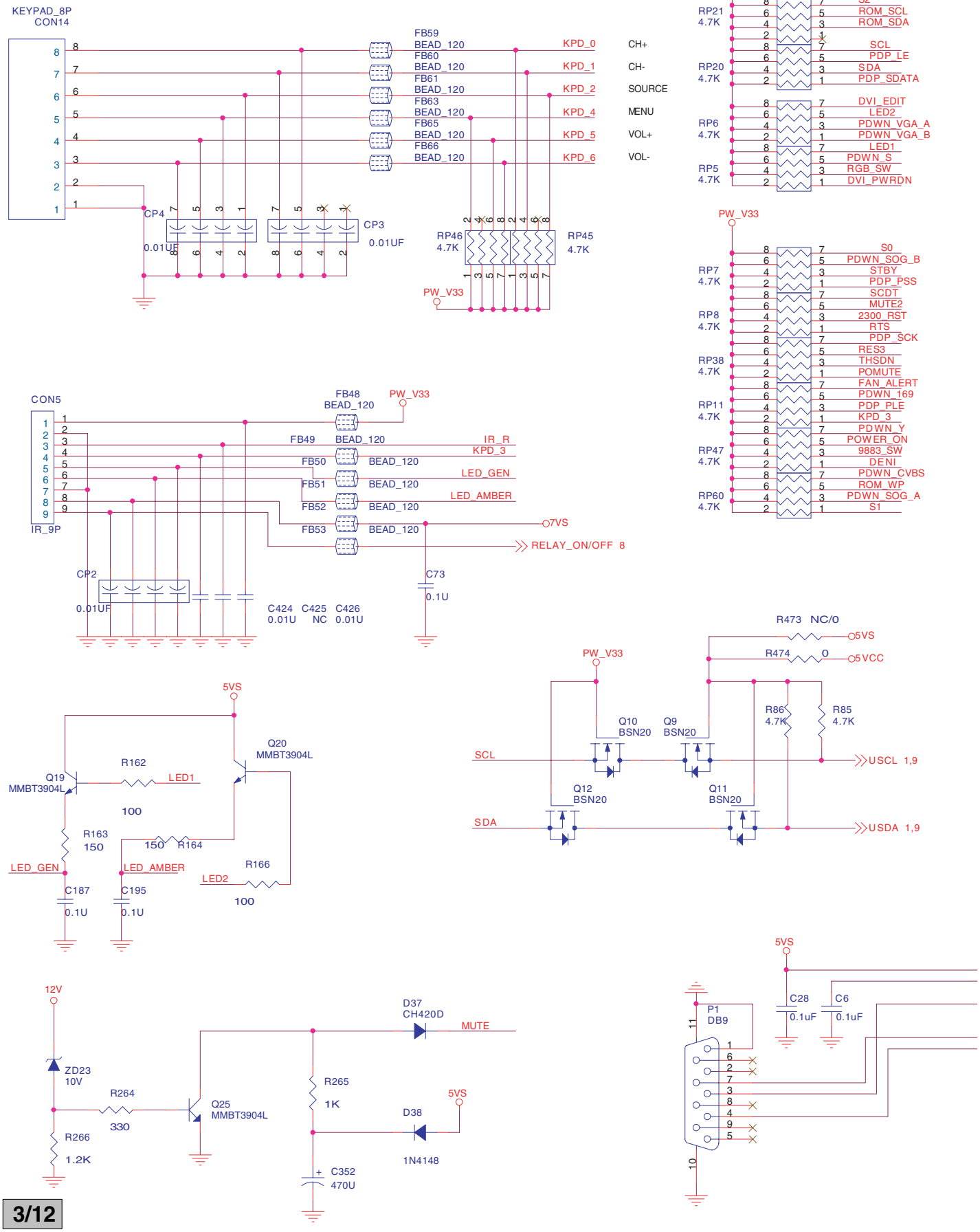

U8C
PW2300
XINB
XOUTB
Y1
XTAL27.000
R46 1.50M
C69
18pF
C76
18pF
V33
R33 0
R34 0
R35 0
XIN
XOUT
SA6
SA5
SA2
SCL
SDA
HDCPSCL
HDCPSDA
RESET
I2C: 0x62
GPIO
SYSCLKT
EXTINT
GPIO0
GPIO2
GPIO9
GPIO10
GPIO11
GPIO12
GPIO13
GPIO14
GPIO15
NC1
NC2
MCL
LVDS_ON 7
TP6
TP7
TP8
TP9
TP10
TP11
TP12
TP13
3,11 SCL
3,11 SDA
3 2300_RST
5VCC
FB46
BEAD_1K/08
U29 LD1117_33
VIN
VOUT
GND
C179
10U
V33SWA
C20
100U
16V
C171
0.1U
MAD[15:0]
SAD[15:0]
RP1
RP3
RP4
RP2
47
U8B
FSD0
FSD1
FSD2
FSD3
FSD4
FSD5
FSD6
FSD7
FSD8
FSD9
FSD10
FSD11
FSD12
FSD13
FSD14
FSD15
FSCLK
FSA0
FSA1
FSA2
FSA3
FSA4
FSA5
FSA6
FSA7
FSA8
FSA9
FSA10
FSA11
FSBANK0
FSBANK1
FSDQM
FSRAS
FSCAS
FSWE
SDRAM I/F
SACLK
MACLK
R49
MAA0
MAA1
MAA2
MAA3
MAA4
MAA5
MAA6
MAA7
MAA8
MAA9
MAA10
MABA0
MADQM
MARASn
MACASn
MAWEn
U7
SDRAMX16M_TSOP50
CKE
CLK
DQML
DQMH
RAS
CAS
WE
CS
VCC1
VCC2
VCC3
VCC4
VCC5
VCC6
GND1
GND2
GND3
GND4
GND5
GND6
C184
C75
C81
C74
C71
C70
0.1U

• PW318B_MISC



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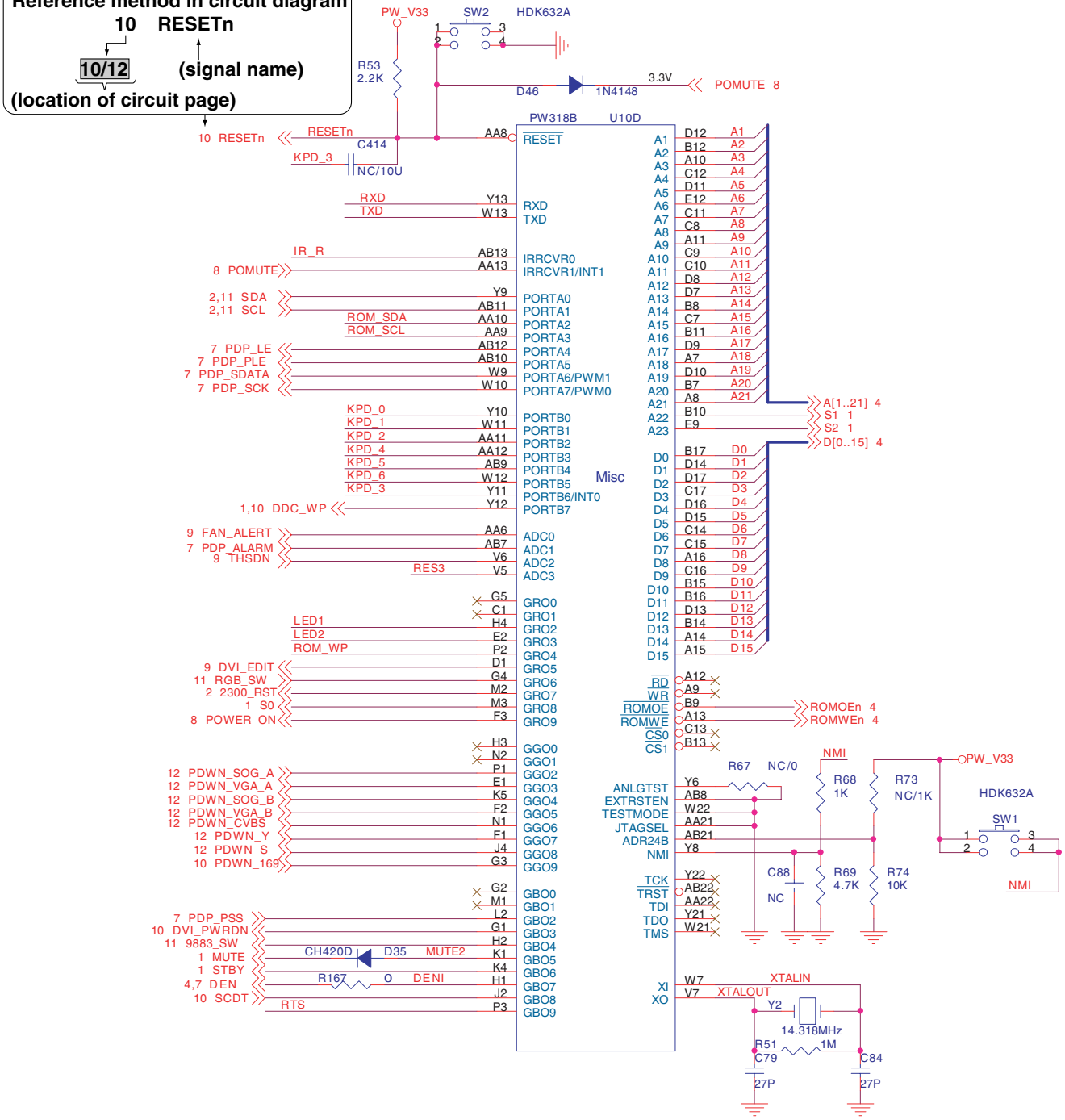
Note:

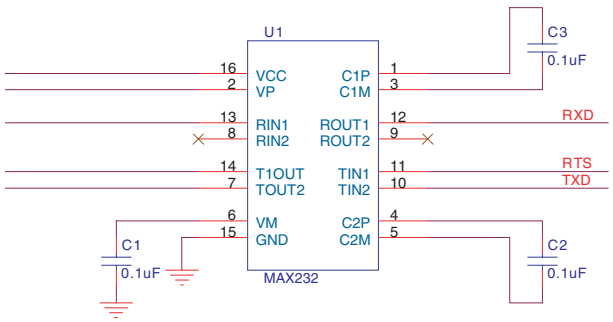
Reference method in circuit diagram

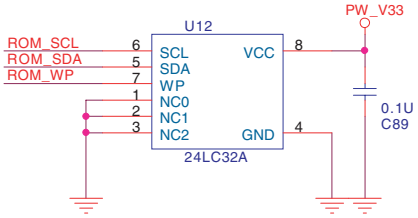
10 RESETn

10/12 **(signal name)**

(location of circuit page)







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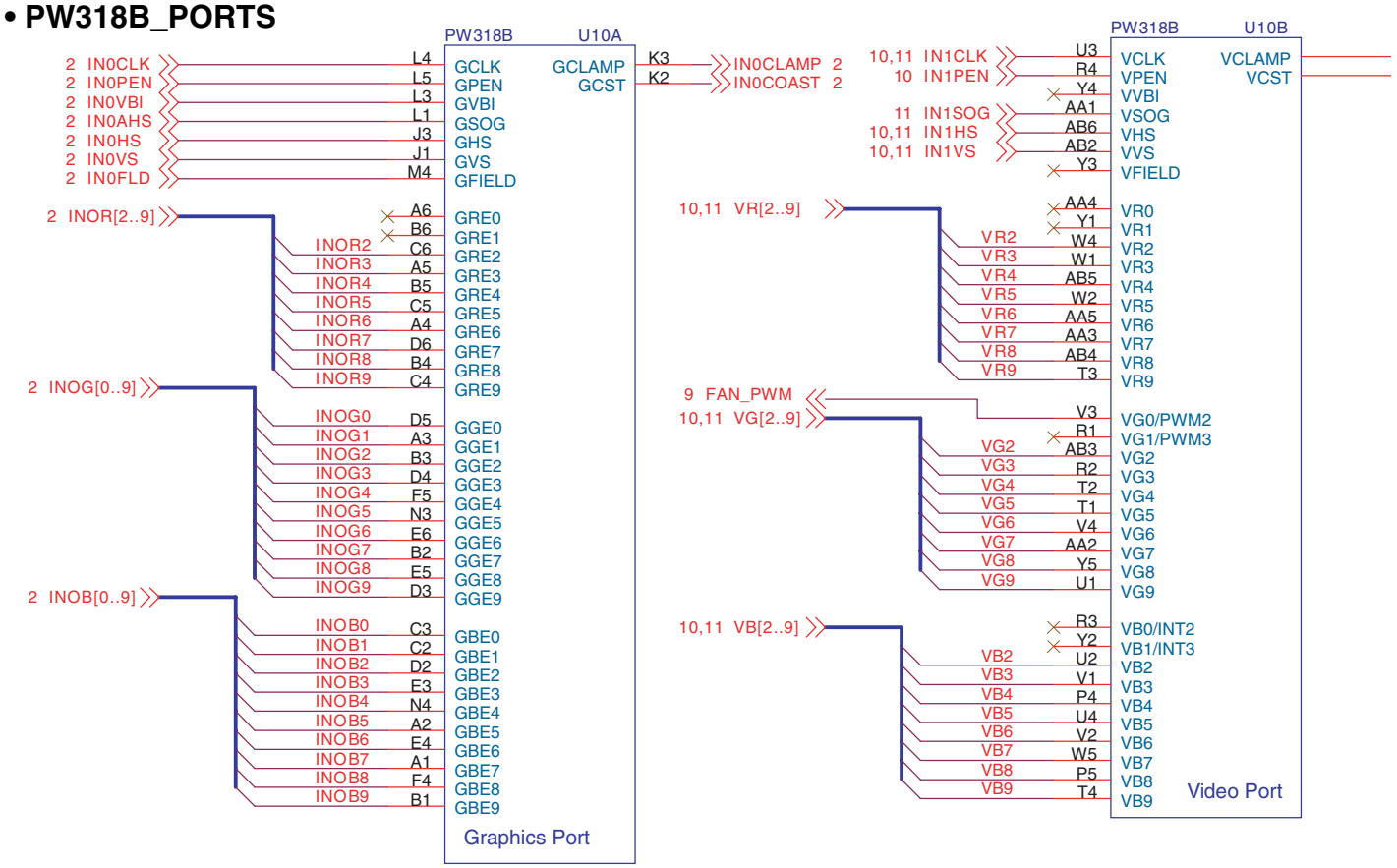
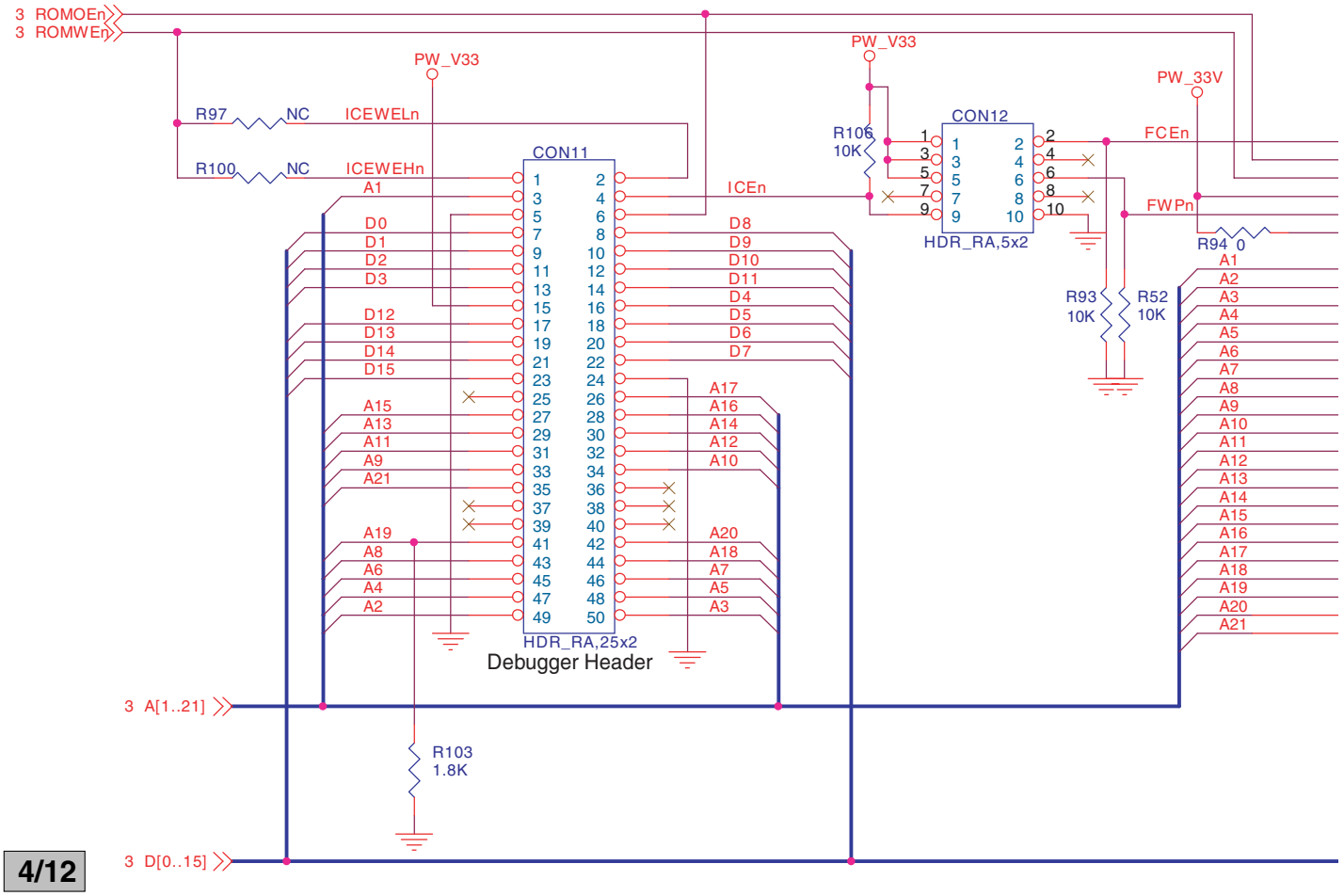
• PW318B_PORTS





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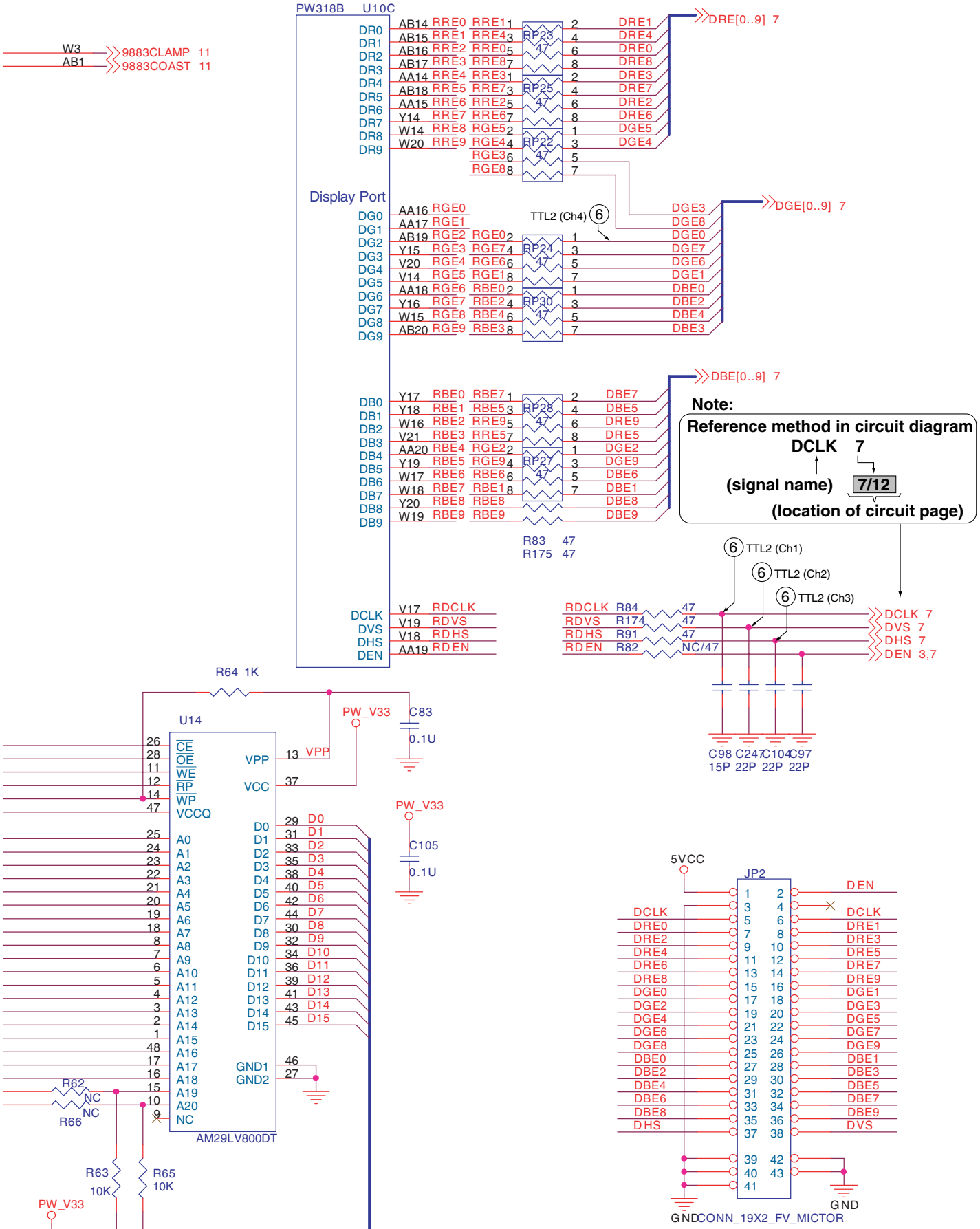
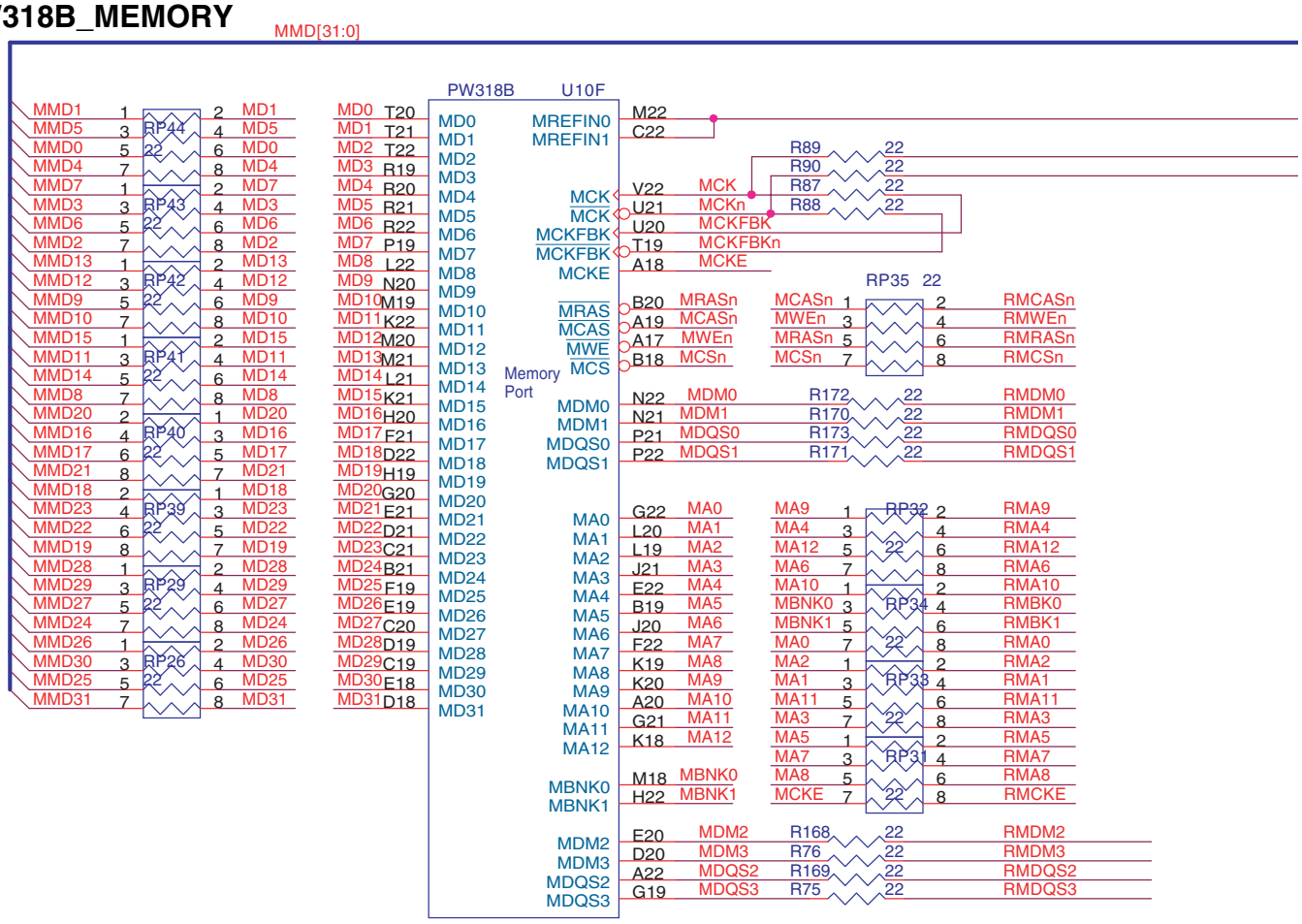
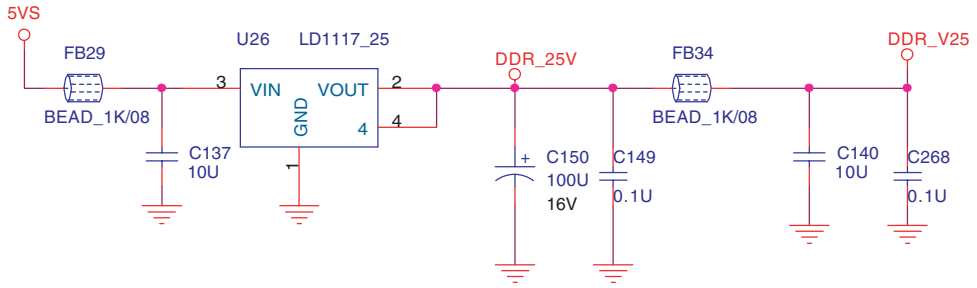
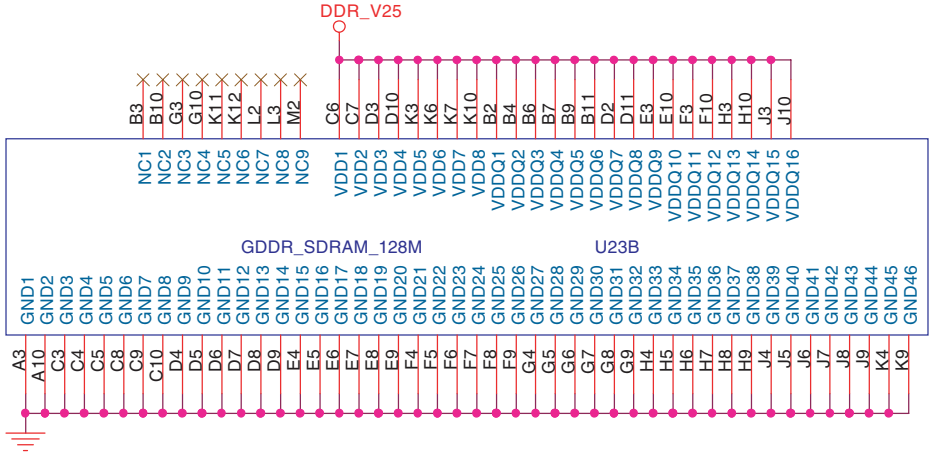
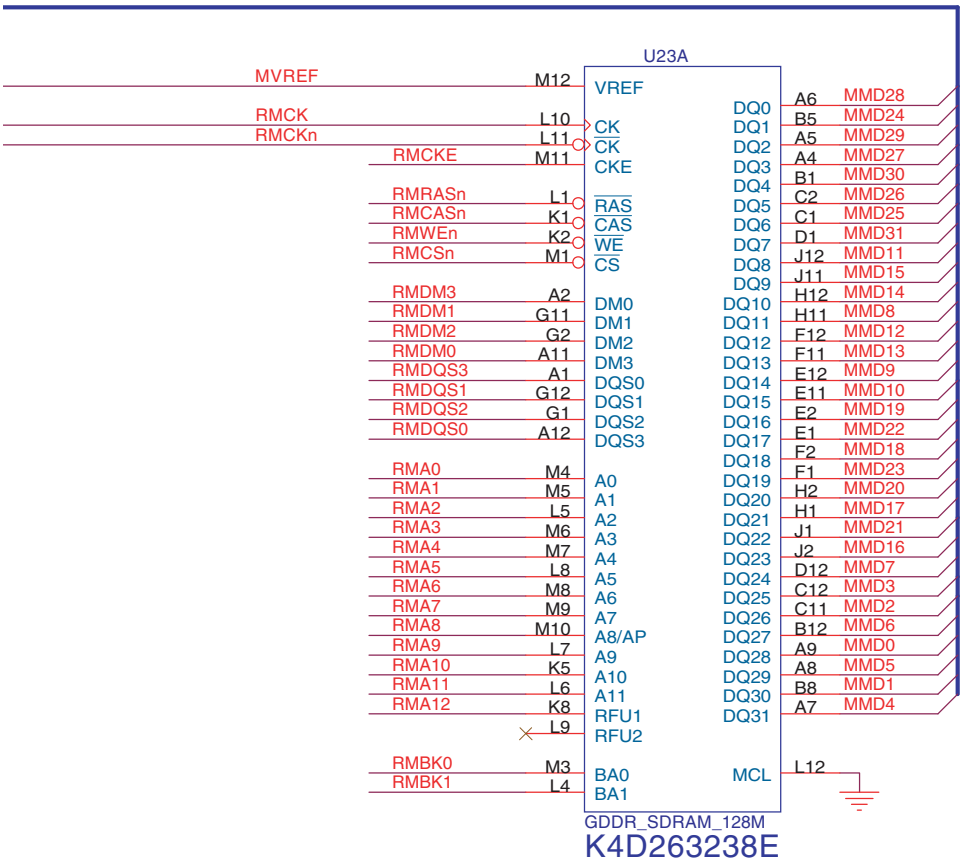

PW318B U10C
Display Port
W3
AB1
9883CLAMP 11
9883COAST 11
DR0
DR1
DR2
DR3
DR4
DR5
DR6
DR7
DR8
DR9
DG0
DG1
DG2
DG3
DG4
DG5
DG6
DG7
DG8
DG9
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
DB8
DB9
DCLK
DVS
DHS
DEN
DRE[0..9] 7
DGE[0..9] 7
DBE[0..9] 7
TTL2 (Ch4) 6
TTL2 (Ch1) 6
TTL2 (Ch2) 6
TTL2 (Ch3) 6
RP23
RP25
RP22
RP24
RP30
RP28
RP27
47
R83 47
R175 47
Note:
Reference method in circuit diagram
DCLK 7
(signal name) 7/12
(location of circuit page)
RDCLK R84 47
RDVS R174 47
RDHS R91 47
RDEN R82 NC/47
DCLK 7
DVS 7
DHS 7
DEN 3,7
C98 15P
C247 22P
C104 22P
C97 22P
R64 1K
U14
PW_V33
C83
0.1U
C105
VPP
VCC
VCCQ
CE
OE
WE
RP
WP
GND1
GND2
NC
AM29LV800DT
R62
R66
R63 10K
R65 10K
5VCC
JP2
GND
CONN_19X2_FV_MICTOR

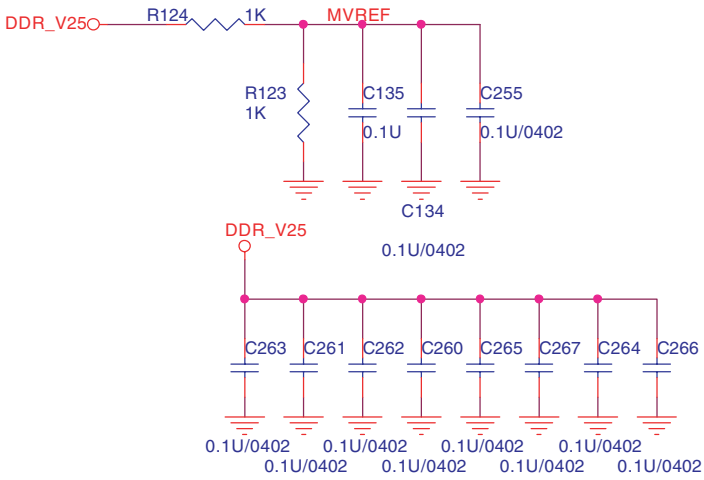
• PW318B_MEMORY


MMD[31:0]
PW318B U10F
MMD1 MMD5 MMD0 MMD4 MMD7 MMD3 MMD6 MMD2 MMD13 MMD12 MMD9 MMD10 MMD15 MMD11 MMD14 MMD8 MMD20 MMD16 MMD17 MMD21 MMD18 MMD23 MMD22 MMD19 MMD28 MMD29 MMD27 MMD24 MMD26 MMD30 MMD25 MMD31
RP44 RP43 RP42 RP41 RP40 RP39 RP29 RP26
MD1 MD5 MD0 MD4 MD7 MD3 MD6 MD2 MD13 MD12 MD9 MD10 MD15 MD11 MD14 MD8 MD20 MD16 MD17 MD21 MD18 MD23 MD22 MD19 MD28 MD29 MD27 MD24 MD26 MD30 MD25 MD31
MD0 T20 MD1 T21 MD2 T22 MD3 R19 MD4 R20 MD5 R21 MD6 R22 MD7 P19 MD8 L22 MD9 N20 MD10 M19 MD11 K22 MD12 M20 MD13 M21 MD14 L21 MD15 K21 MD16 H20 MD17 F21 MD18 D22 MD19 H19 MD20 G20 MD21 E21 MD22 D21 MD23 C21 MD24 B21 MD25 F19 MD26 E19 MD27 C20 MD28 D19 MD29 C19 MD30 E18 MD31 D18
MD0 MD1 MD2 MD3 MD4 MD5 MD6 MD7 MD8 MD9 MD10 MD11 MD12 MD13 MD14 MD15 MD16 MD17 MD18 MD19 MD20 MD21 MD22 MD23 MD24 MD25 MD26 MD27 MD28 MD29 MD30 MD31
MREFIN0 MREFIN1
M22 C22
R89 R90 R87 R88 22
MCK MCK MCKFBK MCKFBK MCKE
V22 U21 U20 T19 A18
MCK MCKn MCKFBK MCKFBKn MCKE
MRAS MCAS MWE MCS
B20 A19 A17 B18
MRASn MCASn MWEn MCSn
RP35 22
MCASn MWEn MRASn MCSn
RMCASn RMWEn RMRASn RMCSn
Memory Port
MDM0 MDM1 MDQS0 MDQS1
N22 N21 P21 P22
MDM0 MDM1 MDQS0 MDQS1
R172 R170 R173 R171 22
RMDM0 RMDM1 RMDQS0 RMDQS1
MA0 MA1 MA2 MA3 MA4 MA5 MA6 MA7 MA8 MA9 MA10 MA11 MA12
G22 L20 L19 J21 E22 B19 J20 F22 K19 K20 A20 G21 K18
MA0 MA1 MA2 MA3 MA4 MA5 MA6 MA7 MA8 MA9 MA10 MA11 MA12
MA9 MA4 MA12 MA6 MA10 MBNK0 MBNK1 MA0 MA2 MA1 MA11 MA3 MA5 MA7 MA8 MCKE
RP32 RP34 RP33 RP31 22
RMA9 RMA4 RMA12 RMA6 RMA10 RMBK0 RMBK1 RMA0 RMA2 RMA1 RMA11 RMA3 RMA5 RMA7 RMA8 RMCKE
MBNK0 MBNK1
M18 H22
MBNK0 MBNK1
MDM2 MDM3 MDQS2 MDQS3
E20 D20 A22 G19
MDM2 MDM3 MDQS2 MDQS3
R168 R76 R169 R75 22
RMDM2 RMDM3 RMDQS2 RMDQS3

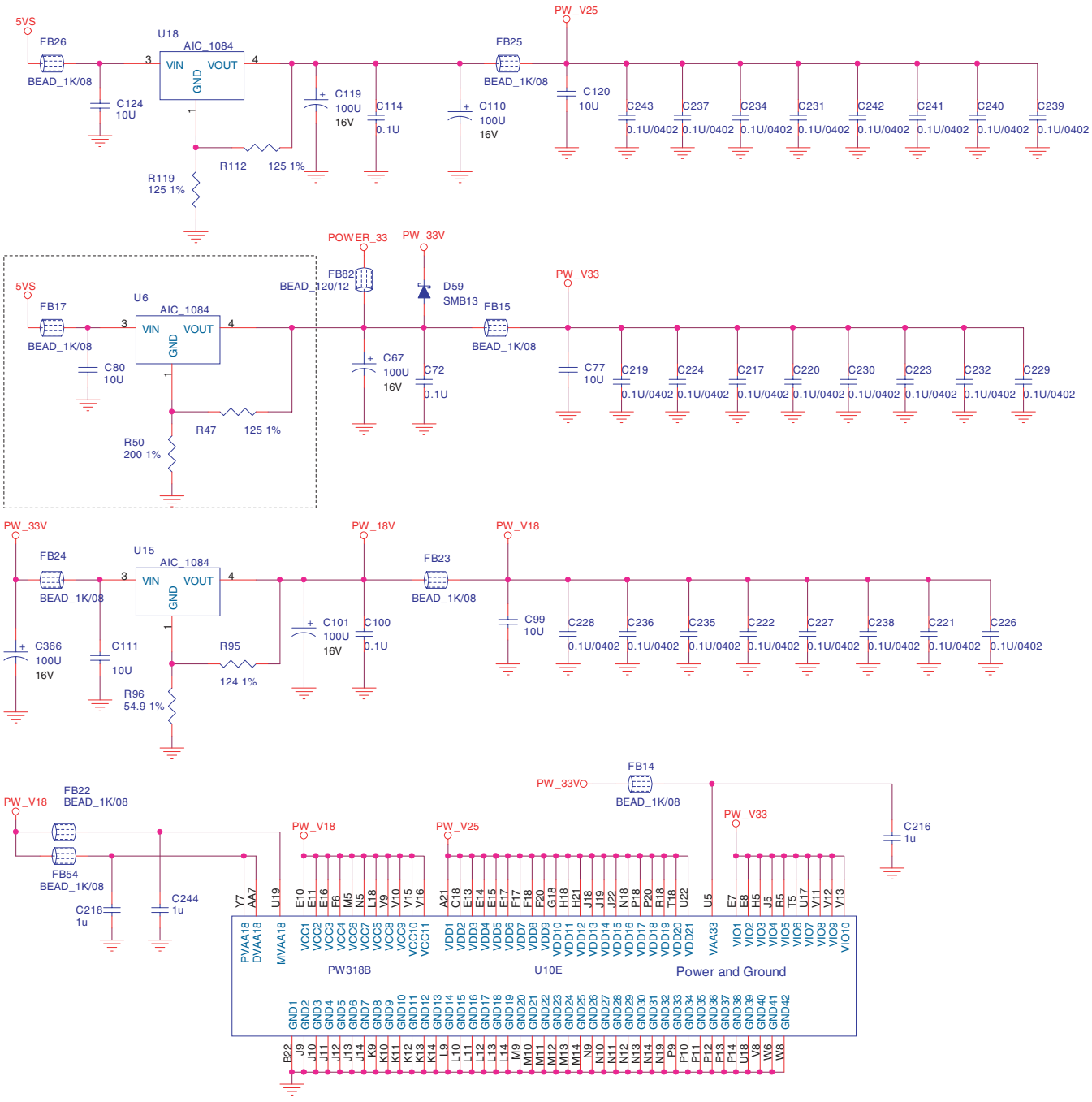


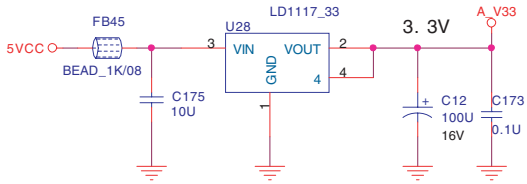

DDR_V25
B3 B10 G3 G10 K11 K12 L2 L3 M2
C6 C7 D3 D10 K3 K6 K7 K10 B2 B4 B6 B7 B9 B11 D2 D11 E3 E10 F3 F10 H3 H10 J3 J10
NC1 NC2 NC3 NC4 NC5 NC6 NC7 NC8 NC9
VDD1 VDD2 VDD3 VDD4 VDD5 VDD6 VDD7 VDD8 VDDQ1 VDDQ2 VDDQ3 VDDQ4 VDDQ5 VDDQ6 VDDQ7 VDDQ8 VDDQ9 VDDQ10 VDDQ11 VDDQ12 VDDQ13 VDDQ14 VDDQ15 VDDQ16
GDDR_SDRAM_128M U23B
GND1 GND2 GND3 GND4 GND5 GND6 GND7 GND8 GND9 GND10 GND11 GND12 GND13 GND14 GND15 GND16 GND17 GND18 GND19 GND20 GND21 GND22 GND23 GND24 GND25 GND26 GND27 GND28 GND29 GND30 GND31 GND32 GND33 GND34 GND35 GND36 GND37 GND38 GND39 GND40 GND41 GND42 GND43 GND44 GND45 GND46
A3 A10 C3 C4 C5 C8 C9 C10 D4 D5 D6 D7 D8 D9 E4 E5 E6 E7 E8 E9 F4 F5 F6 F7 F8 F9 G4 G5 G6 G7 G8 G9 H4 H5 H6 H7 H8 H9 J4 J5 J6 J7 J8 J9 K4 K9

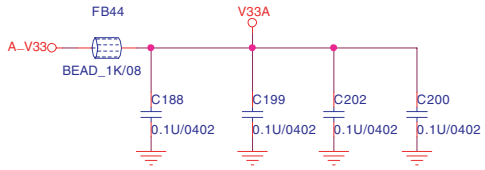

U23A
MVREF
M12
VREF
RMCK
RMCKn
L10
L11
CK
CK
RMCKE
M11
CKE
RMRASn
RMCASn
RMWEn
RMCSn
L1
K1
K2
M1
RAS
CAS
WE
CS
RMDM3
RMDM1
RMDM2
RMDM0
RMDQS3
RMDQS1
RMDQS2
RMDQS0
A2
G11
G2
A11
A1
G12
G1
A12
DM0
DM1
DM2
DM3
DQS0
DQS1
DQS2
DQS3
RMA0
RMA1
RMA2
RMA3
RMA4
RMA5
RMA6
RMA7
RMA8
RMA9
RMA10
RMA11
RMA12
M4
M5
L5
M6
M7
L8
M8
M9
M10
L7
K5
L6
K8
L9
A0
A1
A2
A3
A4
A5
A6
A7
A8/AP
A9
A10
A11
RFU1
RFU2
RMBK0
RMBK1
M3
L4
BA0
BA1
DQ0
DQ1
DQ2
DQ3
DQ4
DQ5
DQ6
DQ7
DQ8
DQ9
DQ10
DQ11
DQ12
DQ13
DQ14
DQ15
DQ16
DQ17
DQ18
DQ19
DQ20
DQ21
DQ22
DQ23
DQ24
DQ25
DQ26
DQ27
DQ28
DQ29
DQ30
DQ31
A6
B5
A5
A4
B1
C2
C1
D1
J12
J11
H12
H11
F12
F11
E12
E11
E2
E1
F2
F1
H2
H1
J1
J2
D12
C12
C11
B12
A9
A8
B8
A7
MMD28
MMD24
MMD29
MMD27
MMD30
MMD26
MMD25
MMD31
MMD11
MMD15
MMD14
MMD8
MMD12
MMD13
MMD9
MMD10
MMD19
MMD22
MMD18
MMD23
MMD20
MMD17
MMD21
MMD16
MMD7
MMD3
MMD2
MMD6
MMD0
MMD5
MMD1
MMD4
MCL
L12
GDDR_SDRAM_128M
K4D263238E

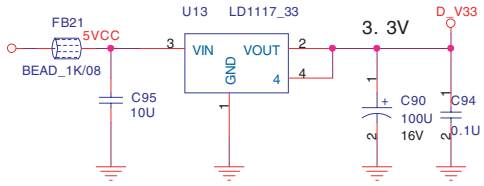

DDR_V25
R124
1K
MVREF
R123
1K
C135
0.1U
C255
0.1U/0402
C134
DDR_V25
0.1U/0402
C263
C261
C262
C260
C265
C267
C264
C266
0.1U/0402
0.1U/0402
0.1U/0402
0.1U/0402
0.1U/0402
0.1U/0402
0.1U/0402
0.1U/0402

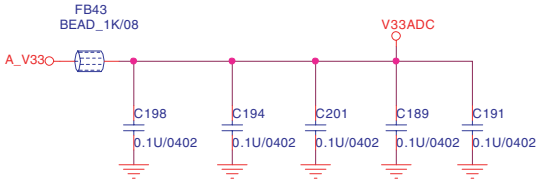
• PW_POWER

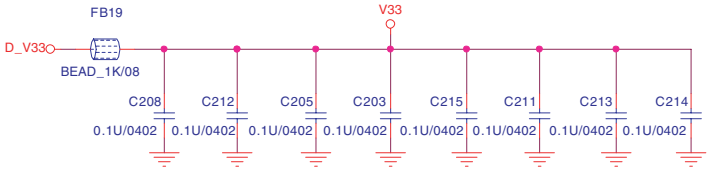

5VS
FB26
BEAD_1K/08
U18
AIC_1084
VIN
VOUT
GND
C124
10U
C119
100U
16V
C114
0.1U
R112
125 1%
R119
125 1%
FB25
BEAD_1K/08
C110
100U
16V
PW_V25
C120
10U
C243
C237
C234
C231
C242
C241
C240
C239
0.1U/0402
POWER_33
PW_33V
FB82
BEAD_120/12
D59
SMB13
5VS
FB17
BEAD_1K/08
U6
AIC_1084
C80
10U
C67
100U
16V
C72
0.1U
R47
125 1%
R50
200 1%
FB15
BEAD_1K/08
PW_V33
C77
10U
C219
C224
C217
C220
C230
C223
C232
C229
PW_33V
FB24
BEAD_1K/08
U15
AIC_1084
C366
100U
16V
C111
10U
R95
124 1%
R96
54.9 1%
C101
100U
16V
C100
0.1U
PW_18V
FB23
BEAD_1K/08
PW_V18
C99
10U
C228
C236
C235
C222
C227
C238
C221
C226
PW_V18
FB22
BEAD_1K/08
FB54
BEAD_1K/08
C218
1u
C244
1u
PW_33V
FB14
BEAD_1K/08
C216
1u
PW_V33
PW_V18
PW_V25
PW318B
U10E
Power and Ground

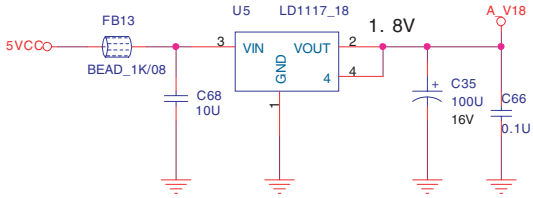

FB45
5VCC
BEAD_1K/08
C175
10U
U28
LD1117_33
VIN
VOUT
GND
3. 3V
C12
100U
16V
C173
0.1U
A_V33

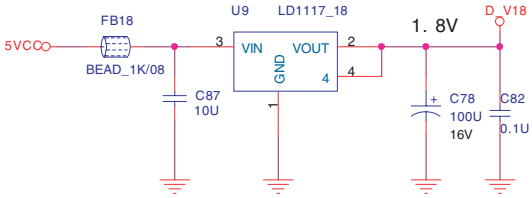

FB44
A_V33
BEAD_1K/08
V33A
C188
0.1U/0402
C199
0.1U/0402
C202
0.1U/0402
C200
0.1U/0402

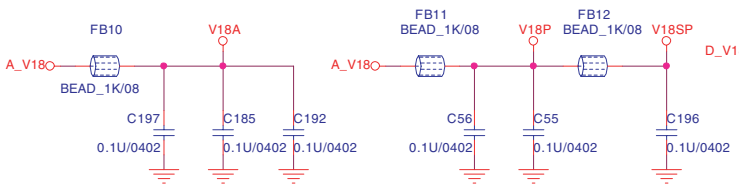

FB21
5VCC
BEAD_1K/08
U13
LD1117_33
VIN
VOUT
GND
3. 3V
D_V33
C95
10U
C90
100U
16V
C94
0.1U

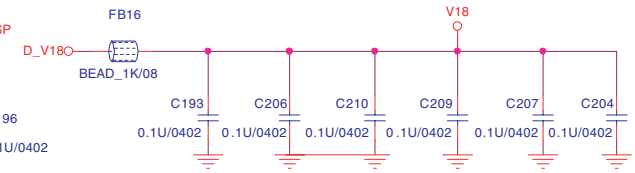

FB43
BEAD_1K/08
A_V33
V33ADC
C198
0.1U/0402
C194
0.1U/0402
C201
0.1U/0402
C189
0.1U/0402
C191
0.1U/0402

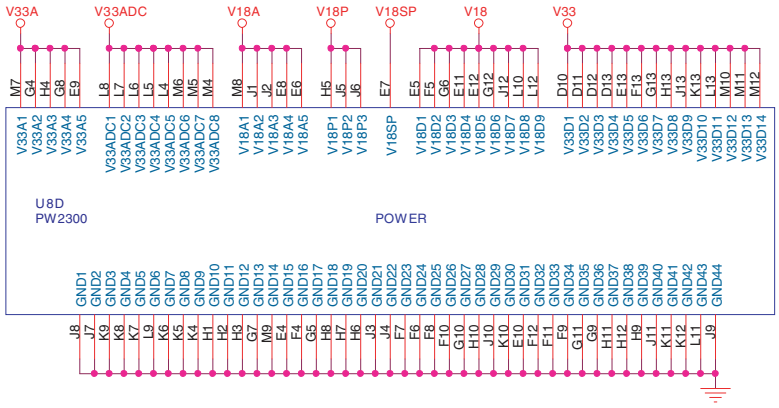

FB19
D_V33
BEAD_1K/08
V33
C208
0.1U/0402
C212
0.1U/0402
C205
0.1U/0402
C203
0.1U/0402
C215
0.1U/0402
C211
0.1U/0402
C213
0.1U/0402
C214
0.1U/0402


FB13
5VCC
BEAD_1K/08
U5
LD1117_18
VIN
VOUT
GND
1. 8V
A_V18
C68
10U
C35
100U
16V
C66
0.1U

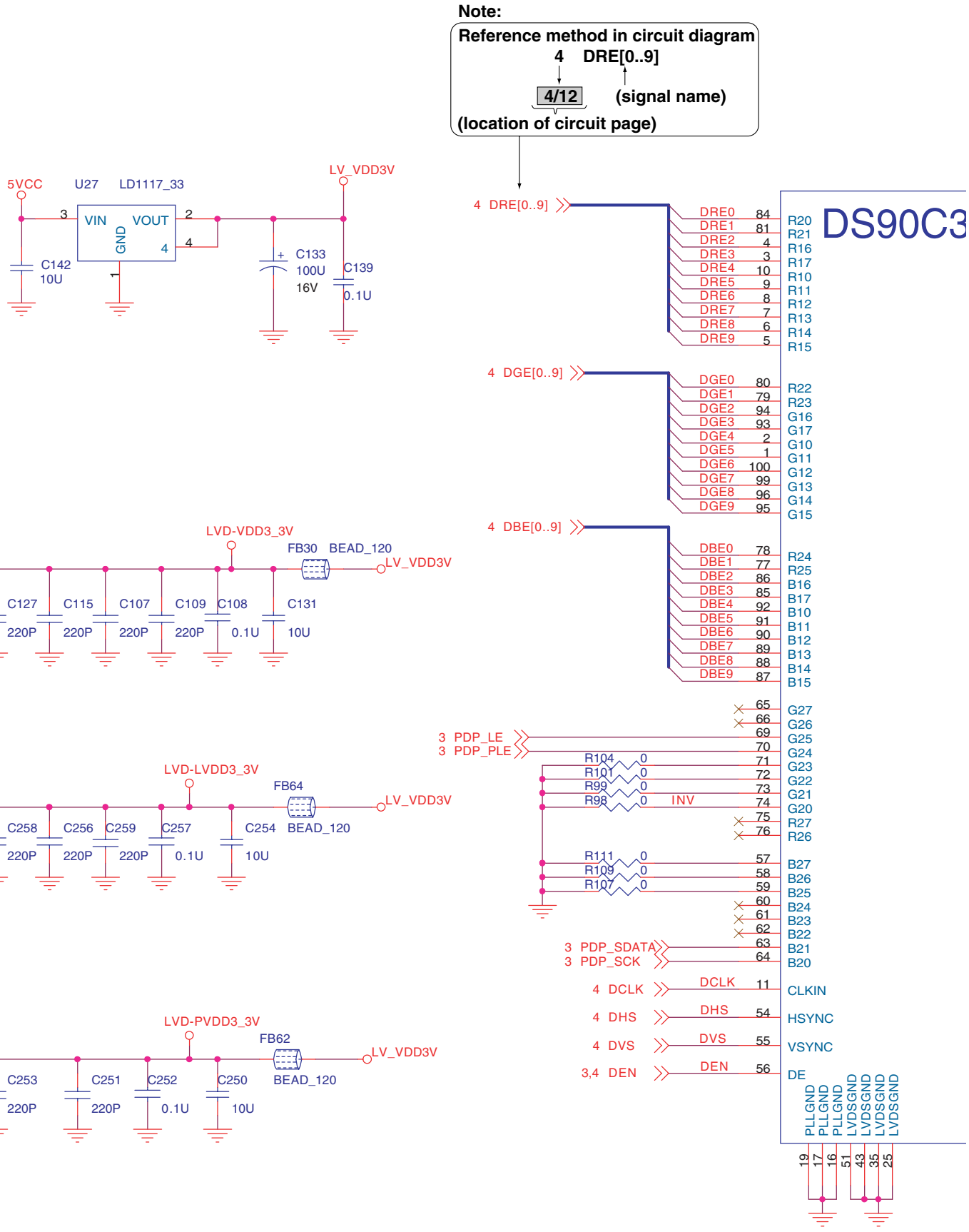

FB18
5VCC
BEAD_1K/08
U9
LD1117_18
VIN
VOUT
GND
1. 8V
D_V18
C87
10U
C78
100U
16V
C82
0.1U


FB10
A_V18
BEAD_1K/08
V18A
C197
0.1U/0402
C185
0.1U/0402
C192
0.1U/0402
FB11
BEAD_1K/08
A_V18
V18P
C56
0.1U/0402
C55
0.1U/0402
FB12
BEAD_1K/08
V18SP
C196
0.1U/0402

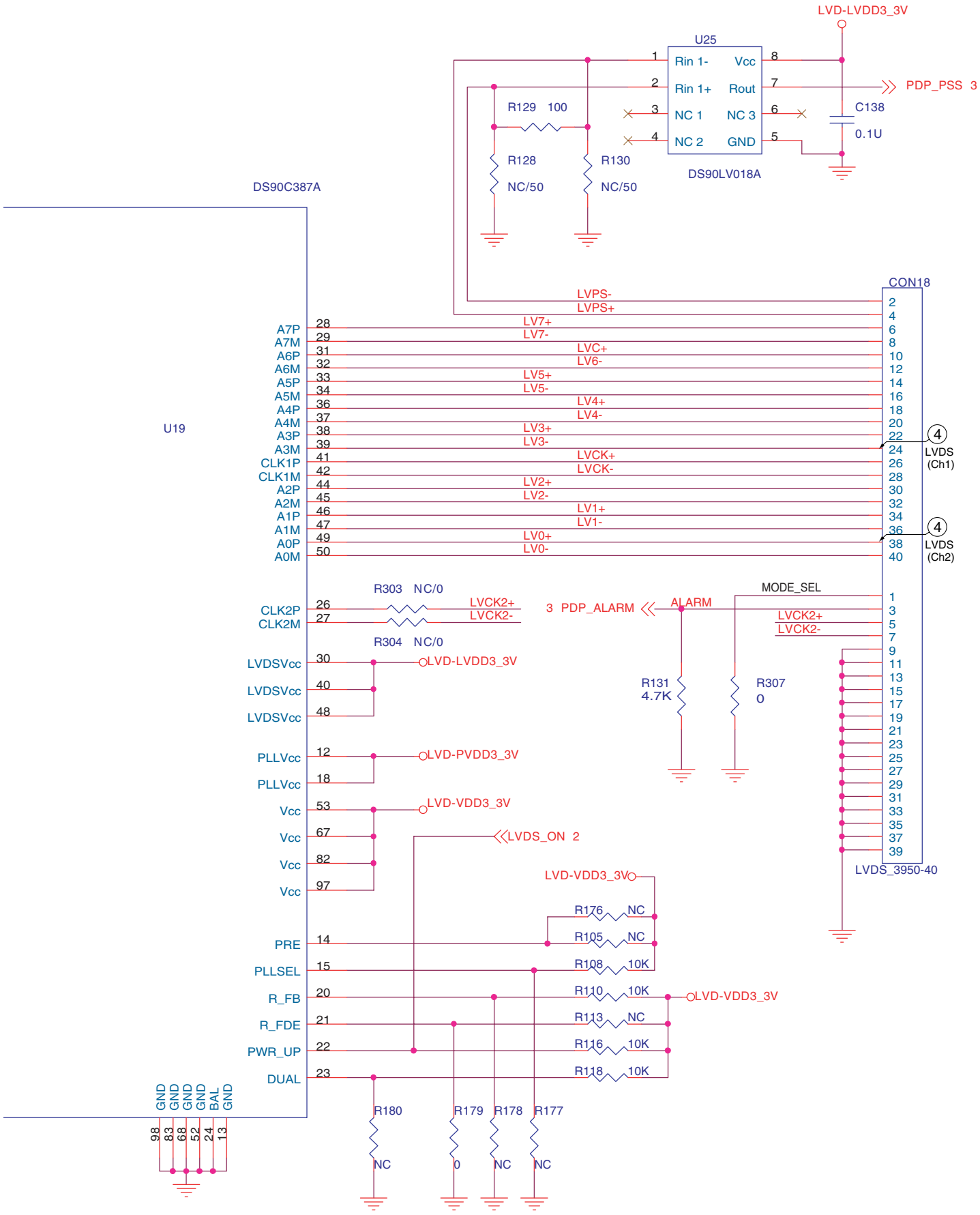

FB16
D_V18
BEAD_1K/08
V18
C193
0.1U/0402
C206
0.1U/0402
C210
0.1U/0402
C209
0.1U/0402
C207
0.1U/0402
C204
0.1U/0402


V33A
V33ADC
V18A
V18P
V18SP
V18
V33
U8D
PW2300
POWER

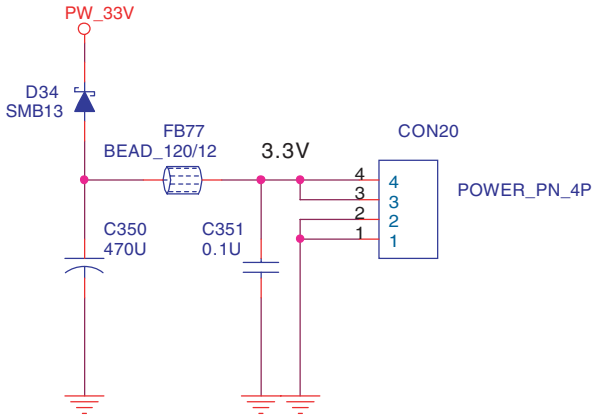
• LVDS

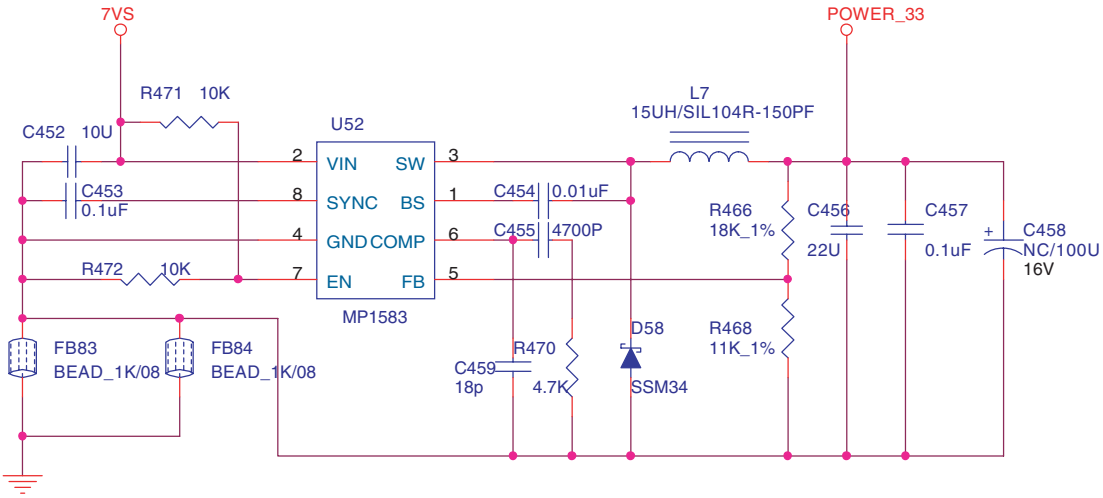

Note:
Reference method in circuit diagram
4 DRE[0..9]
4/12 (signal name)
(location of circuit page)
5VCC
U27
LD1117_33
VIN
VOUT
GND
C142 10U
C133 100U 16V
C139 0.1U
LV_VDD3V
LVD-VDD3_3V
FB30 BEAD_120
C127 220P
C115 220P
C107 220P
C109 220P
C108 0.1U
C131 10U
LVD-LVDD3_3V
FB64
C258 220P
C256 220P
C259 220P
C257 0.1U
C254 10U
BEAD_120
LVD-PVDD3_3V
FB62
C253 220P
C251 220P
C252 0.1U
C250 10U
4 DRE[0..9]
4 DGE[0..9]
4 DBE[0..9]
3 PDP_LE
3 PDP_PLE
R104 0
R101 0
R99 0
R98 0 INV
R111 0
R109 0
R107 0
3 PDP_SDATA
3 PDP_SCK
4 DCLK
4 DHS
4 DVS
3,4 DEN
DS90C3
CLKIN
HSYNC
VSYNC
DE
PLLGND
LVDSGND

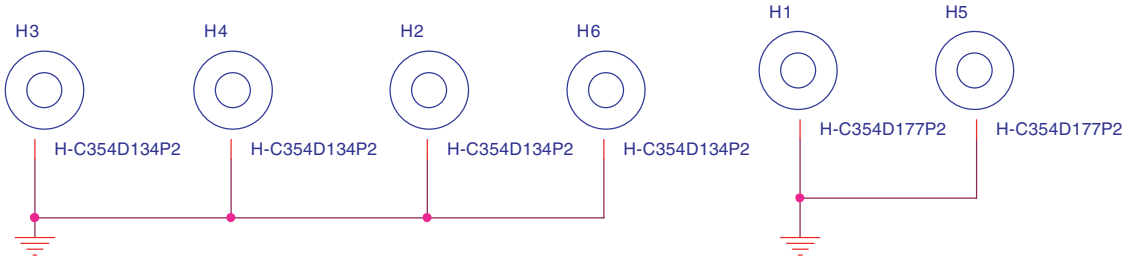
7/12

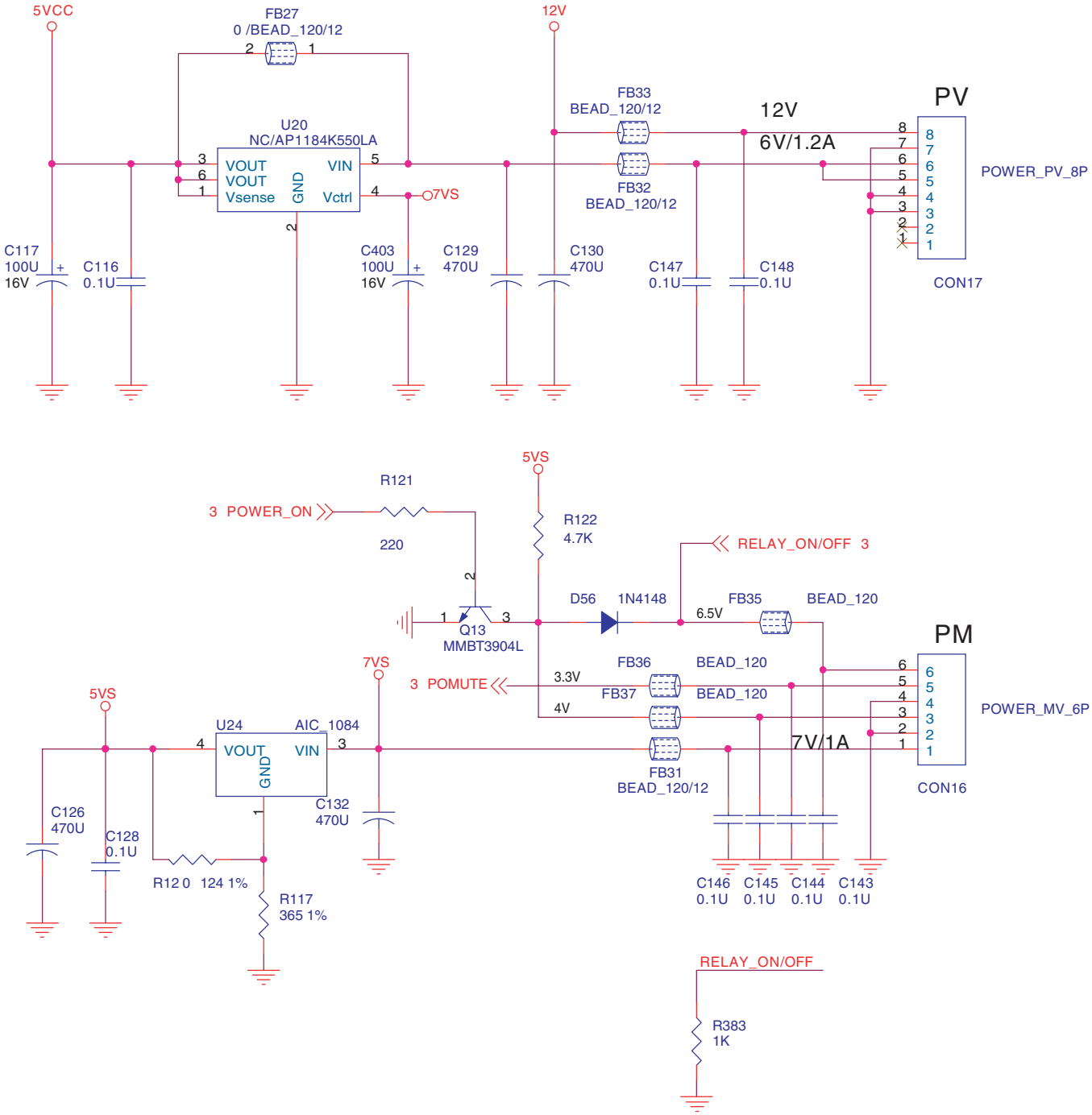

LVD-LVDD3_3V
U25
Rin 1-
Rin 1+
NC 1
NC 2
Vcc
Rout
NC 3
GND
DS90LV018A
PDP_PSS 3
C138
0.1U
R129 100
R128 NC/50
R130 NC/50
DS90C387A
U19
CON18
LVPS-
LVPS+
A7P 28
A7M 29
A6P 31
A6M 32
A5P 33
A5M 34
A4P 36
A4M 37
A3P 38
A3M 39
CLK1P 41
CLK1M 42
A2P 44
A2M 45
A1P 46
A1M 47
A0P 49
A0M 50
LV7+
LV7-
LVC+
LV6-
LV5+
LV5-
LV4+
LV4-
LV3+
LV3-
LVCK+
LVCK-
LV2+
LV2-
LV1+
LV1-
LV0+
LV0-
LVDS (Ch1)
LVDS (Ch2)
R303 NC/0
CLK2P 26
CLK2M 27
LVCK2+
LVCK2-
3 PDP_ALARM
ALARM
MODE_SEL
R304 NC/0
LVDSVcc 30
LVDSVcc 40
LVDSVcc 48
LVD-LVDD3_3V
R131 4.7K
R307 0
PLLVcc 12
PLLVcc 18
LVD-PVDD3_3V
Vcc 53
Vcc 67
Vcc 82
Vcc 97
LVD-VDD3_3V
LVDS_ON 2
LVDS_3950-40
R176 NC
R105 NC
R108 10K
R110 10K
R113 NC
R116 10K
R118 10K
PRE 14
PLLSEL 15
R_FB 20
R_FDE 21
PWR_UP 22
DUAL 23
GND 98
GND 83
GND 68
GND 52
BAL 24
GND 13
R180 NC
R179 0
R178 NC
R177 NC

• POWER

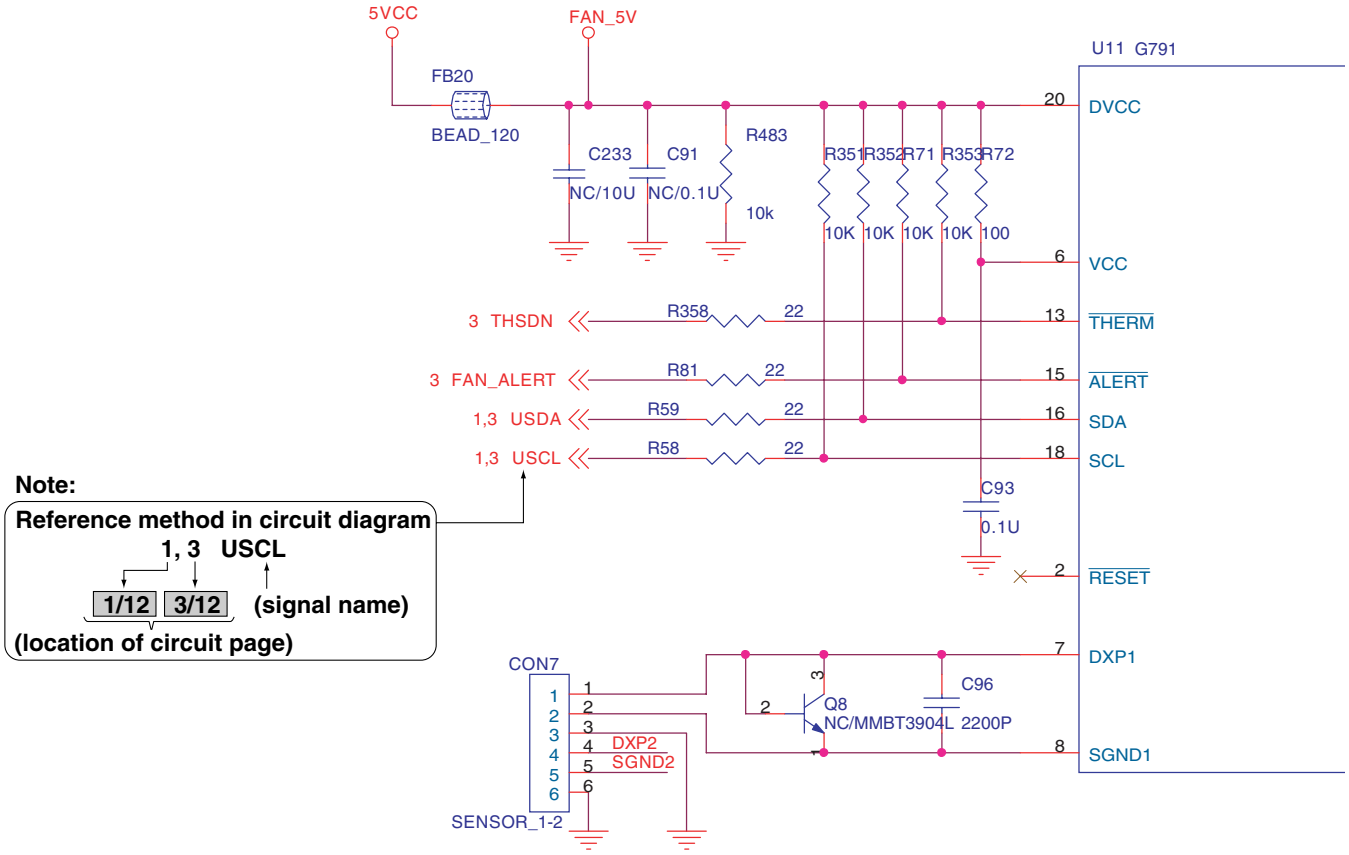

PW_33V
D34
SMB13
FB77
BEAD_120/12
3.3V
CON20
POWER_PN_4P
C350
470U
C351
0.1U

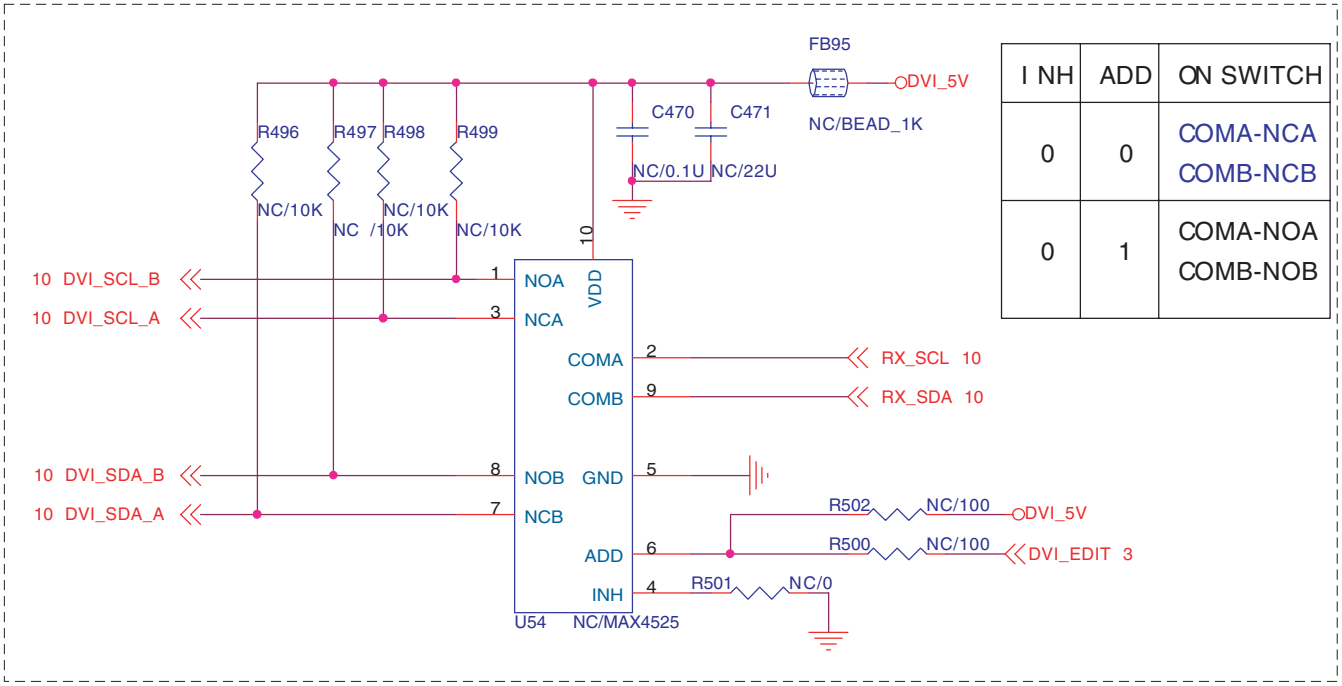

7VS
POWER_33
R471 10K
C452 10U
U52
L7
15UH/SIL104R-150PF
VIN
SW
SYNC
BS
GND
COMP
EN
FB
MP1583
C453
0.1uF
C454 0.01uF
C455 4700P
R466
18K_1%
C456
22U
C457
0.1uF
C458
NC/100U
16V
R472 10K
FB83
BEAD_1K/08
FB84
BEAD_1K/08
C459
18p
R470
4.7K
D58
SSM34
R468
11K_1%


H3
H4
H2
H6
H1
H5
H-C354D134P2
H-C354D134P2
H-C354D134P2
H-C354D134P2
H-C354D177P2
H-C354D177P2


5VCC
FB27
0 /BEAD_120/12
12V
FB33
BEAD_120/12
12V
6V/1.2A
PV
U20
NC/AP1184K550LA
VOUT
VOUT
Vsense
GND
VIN
Vctrl
7VS
FB32
BEAD_120/12
POWER_PV_8P
C117
100U
16V
C116
0.1U
C403
100U
16V
C129
470U
C130
470U
C147
0.1U
C148
0.1U
CON17
5VS
R121
3 POWER_ON
220
R122
4.7K
RELAY_ON/OFF 3
D56
1N4148
FB35
BEAD_120
6.5V
Q13
MMBT3904L
PM
7VS
3 POMUTE
3.3V
FB36
BEAD_120
FB37
BEAD_120
4V
POWER_MV_6P
5VS
U24
AIC_1084
VOUT
GND
VIN
7V/1A
FB31
BEAD_120/12
CON16
C126
470U
C128
0.1U
C132
470U
R120 124 1%
R117
365 1%
C146
0.1U
C145
0.1U
C144
0.1U
C143
0.1U
RELAY_ON/OFF
R383
1K

• FAN_CONNECTOR





I NH	ADD	ON SWITCH
0	0	COMA-NCA COMB-NCB
0	1	COMA-NOA COMB-NOB

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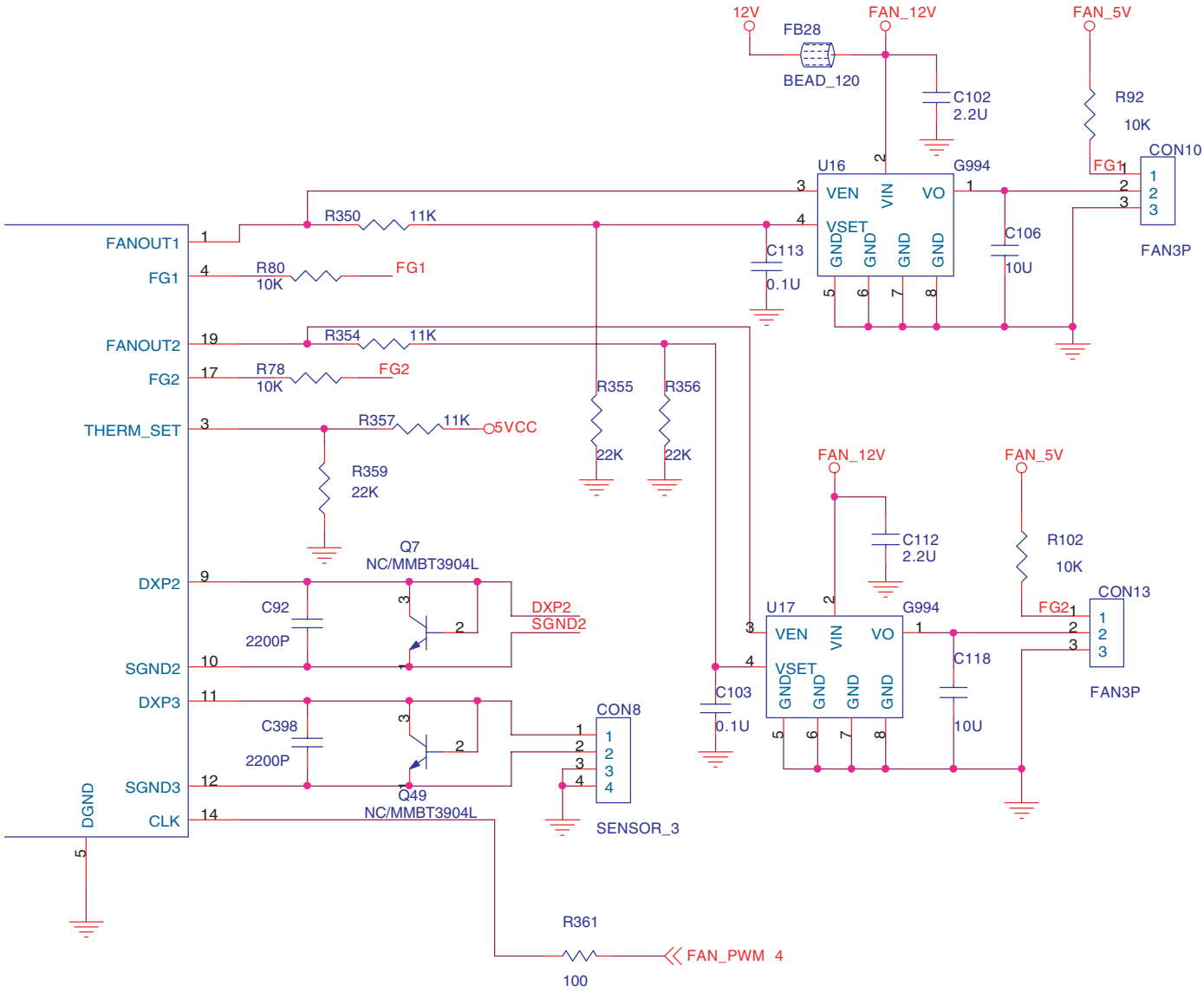
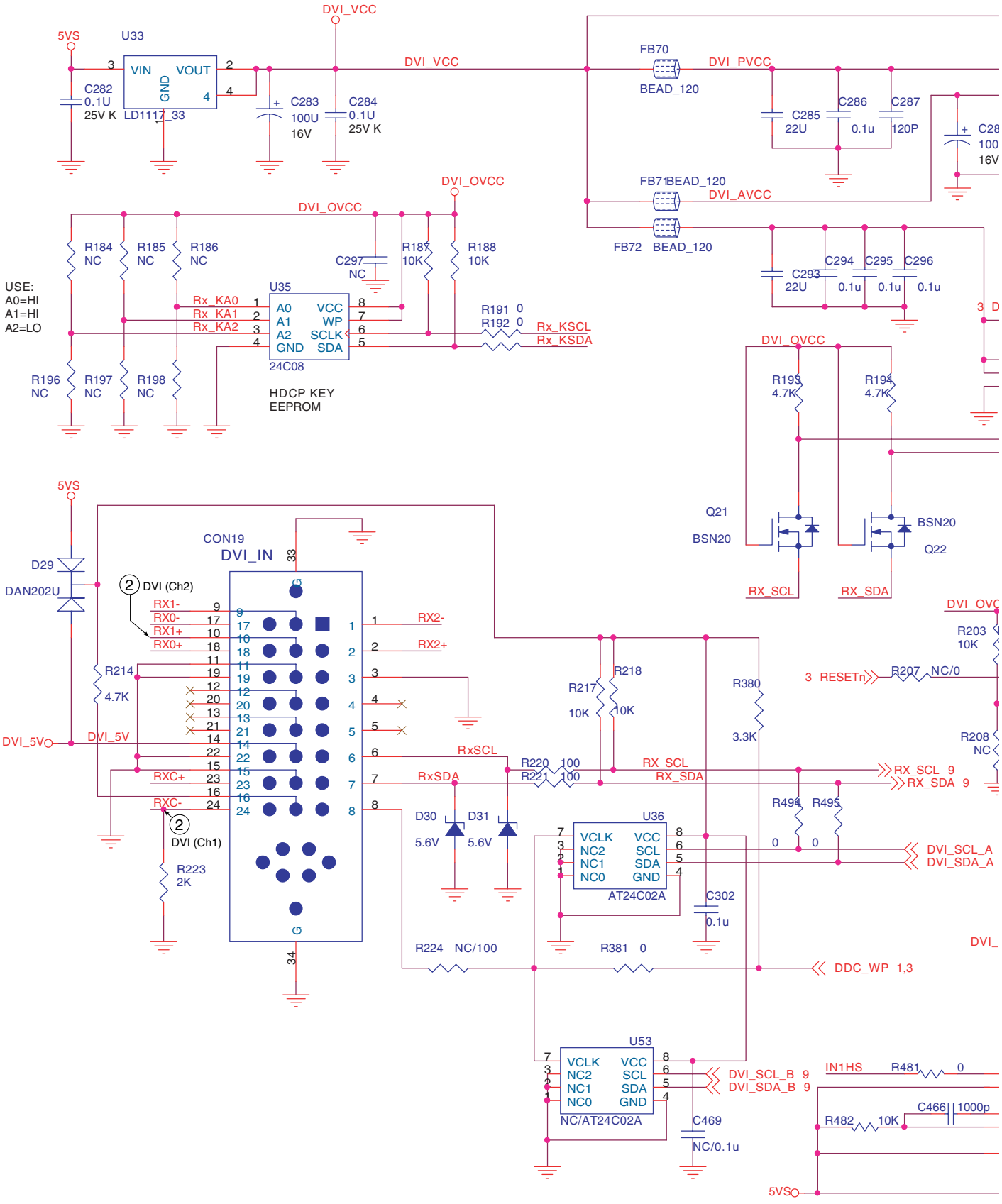
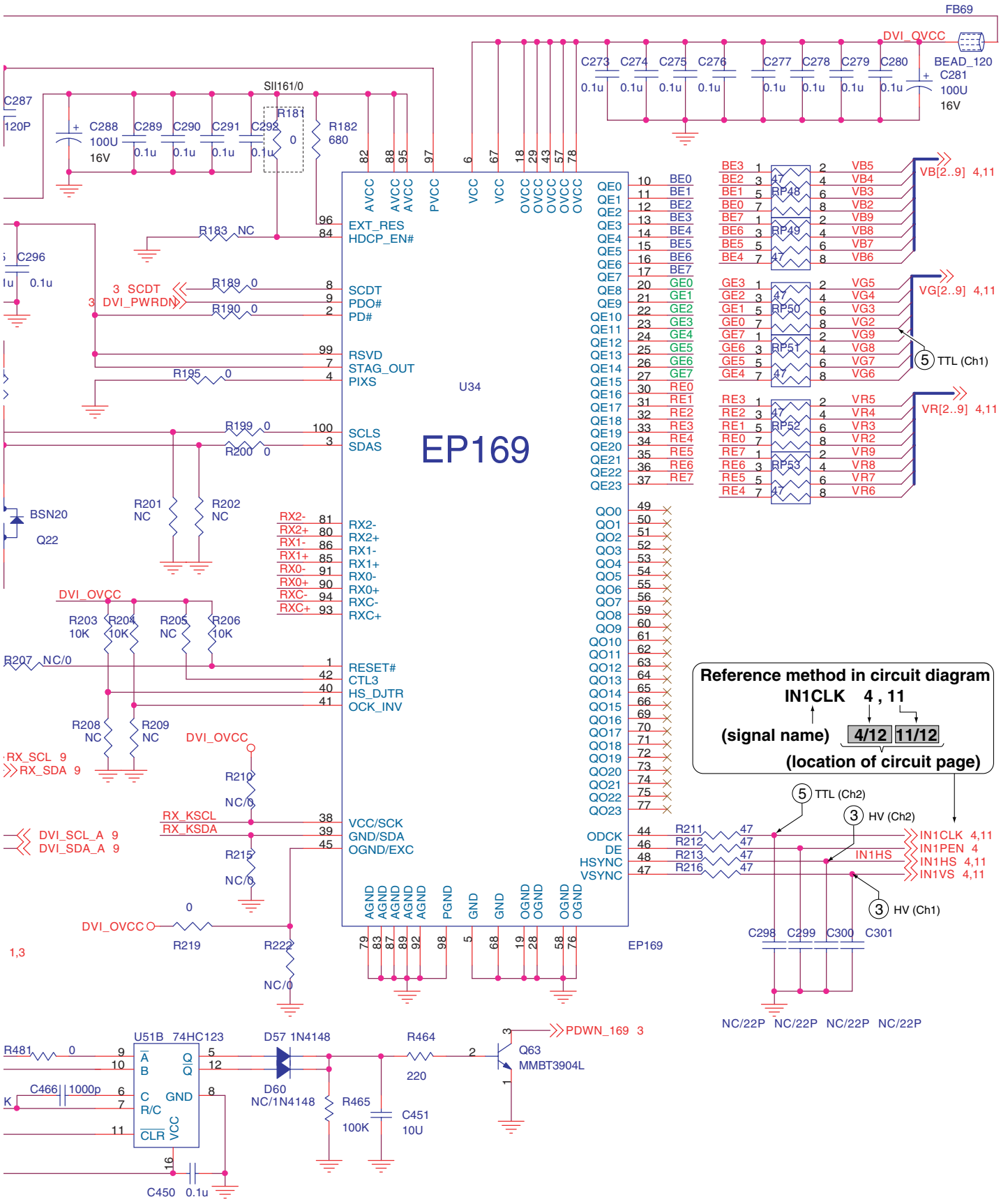
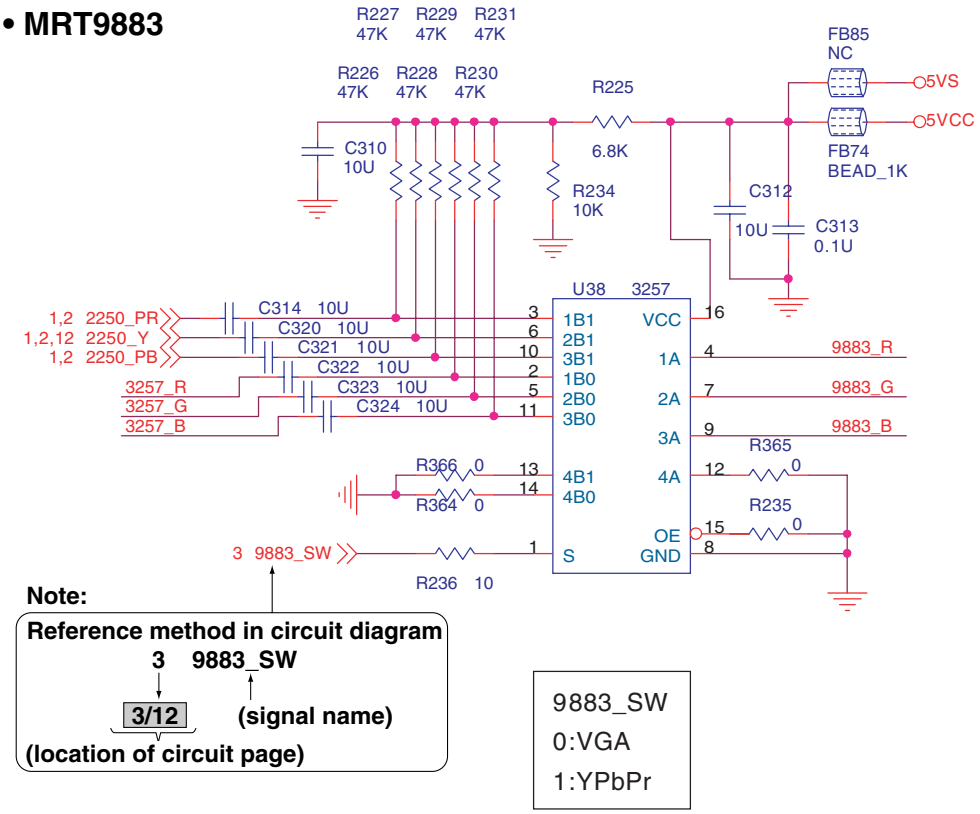

12V
FB28
BEAD_120
FAN_12V
C102
2.2U
FAN_5V
R92
10K
CON10
FG1
FAN3P
U16
G994
VEN
VIN
VO
VSET
GND
C106
10U
C113
0.1U
FANOUT1
FG1
R80
10K
R350
11K
FANOUT2
FG2
R78
10K
R354
11K
THERM_SET
R357
11K
5VCC
R359
22K
R355
22K
R356
22K
Q7
NC/MMBT3904L
DXP2
SGND2
C92
2200P
DXP3
C398
2200P
SGND3
CLK
Q49
NC/MMBT3904L
DGND
CON8
SENSOR_3
R361
100
FAN_PWM 4
U17
C112
2.2U
R102
10K
CON13
C118
10U
C103
0.1U

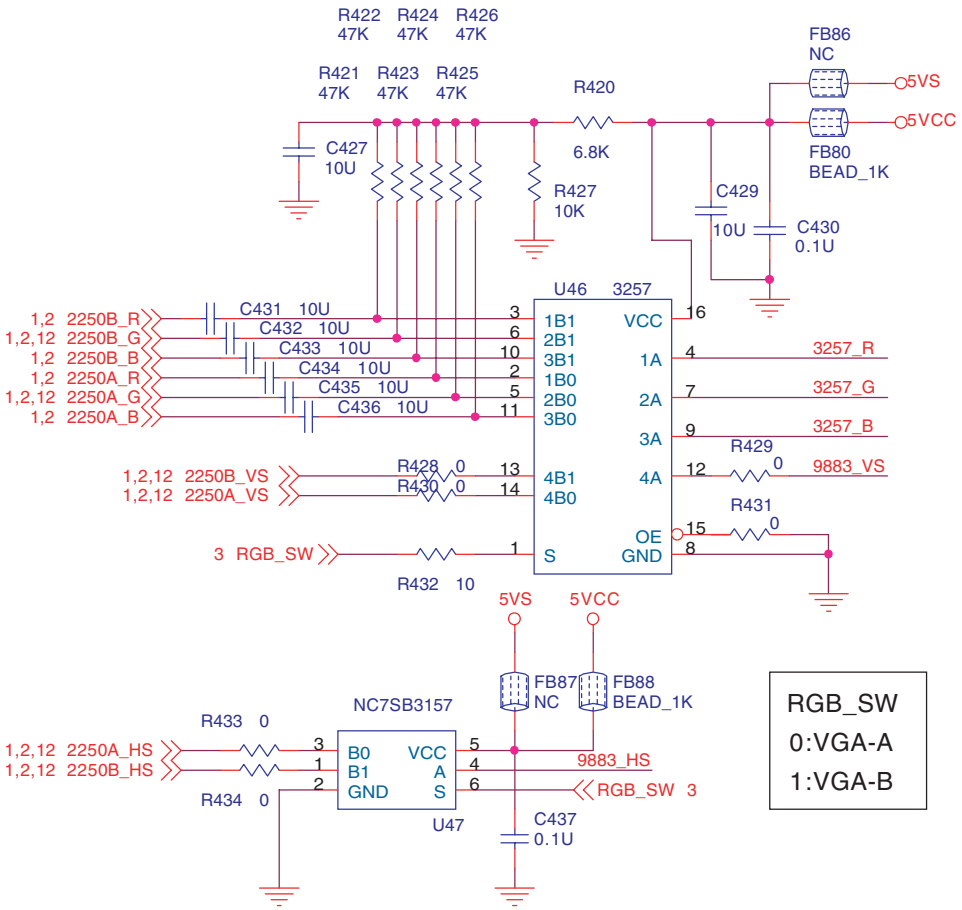
• DVI_HDCP


5VS
U33
VIN
VOUT
GND
LD1117_33
C282 0.1U 25V K
C283 100U 16V
C284 0.1U 25V K
DVI_VCC
FB70
BEAD_120
DVI_PVCC
C285 22U
C286 0.1u
C287 120P
FB71 BEAD_120
DVI_AVCC
FB72 BEAD_120
C293 22U
C294 0.1u
C295 0.1u
C296 0.1u
DVI_OVCC
R184 NC
R185 NC
R186 NC
C297 NC
R187 10K
R188 10K
USE:
A0=HI
A1=HI
A2=LO
U35
A0
A1
A2
GND
VCC
WP
SCLK
SDA
24C08
HDCP KEY EEPROM
Rx_KA0
Rx_KA1
Rx_KA2
R191 0
R192 0
Rx_KSCL
Rx_KSDA
R196 NC
R197 NC
R198 NC
R193 4.7K
R194 4.7K
Q21
BSN20
Q22
RX_SCL
RX_SDA
CON19
DVI_IN
DVI (Ch2)
DVI (Ch1)
RX1-
RX0-
RX1+
RX0+
RXC+
RXC-
RX2-
RX2+
D29
DAN202U
R214 4.7K
DVI_5V
R223 2K
RxSCL
RxSDA
R220 100
R221 100
R217 10K
R218 10K
R380 3.3K
D30 5.6V
D31 5.6V
U36
VCLK
NC2
NC1
NC0
VCC
SCL
SDA
GND
AT24C02A
C302 0.1u
R494
R495
DVI_SCL_A
DVI_SDA_A
R224 NC/100
R381 0
DDC_WP 1,3
R203 10K
R207 NC/0
R208 NC
3 RESETn
RX_SCL 9
RX_SDA 9
U53
NC/AT24C02A
C469 NC/0.1u
DVI_SCL_B 9
DVI_SDA_B 9
IN1HS
R481 0
C466 1000p
R482 10K
5VS

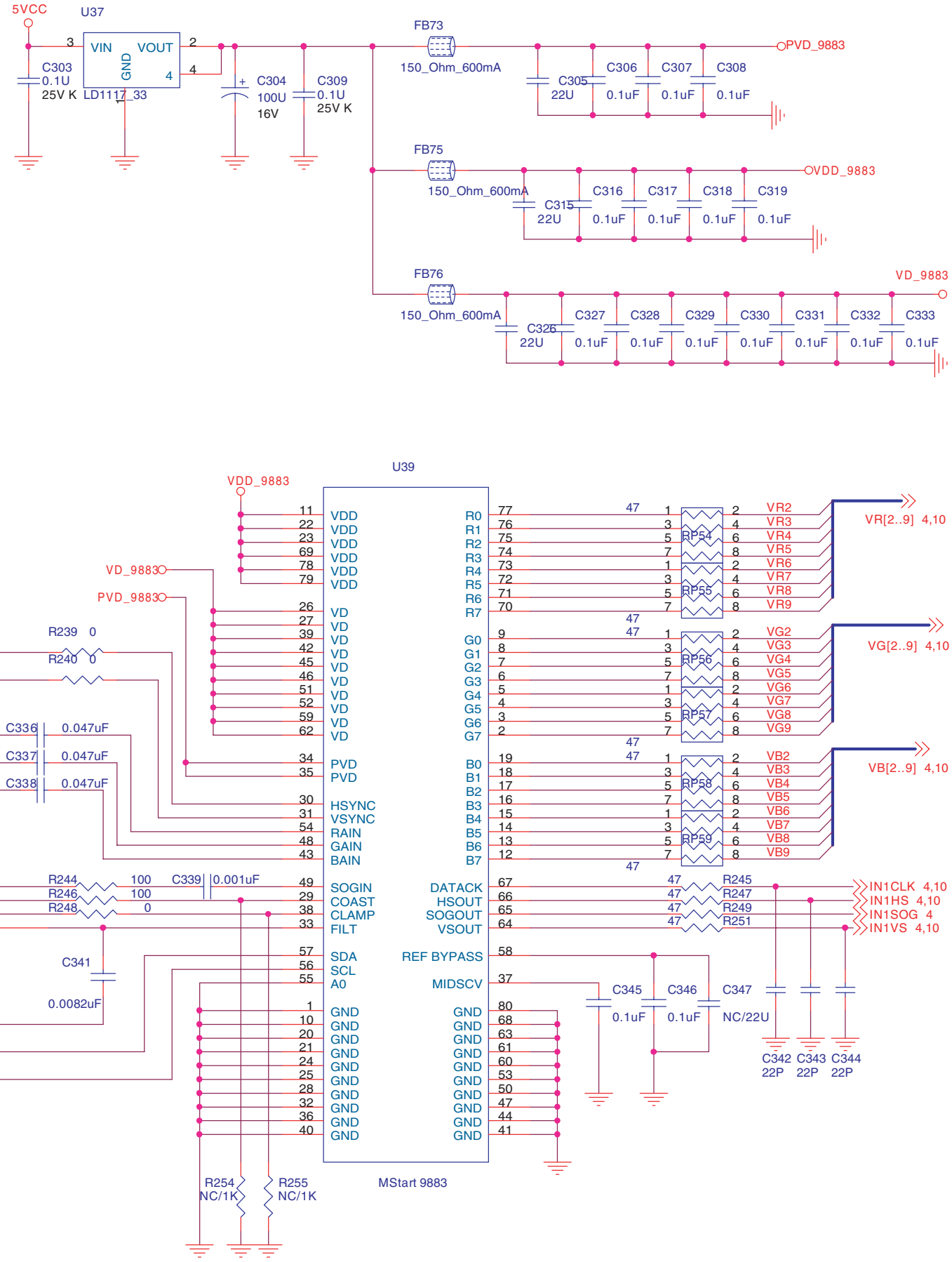

EP169
U34
FB69
DVI_OVCC
BEAD_120
C281 100U 16V
C273 C274 C275 C276 C277 C278 C279 C280 0.1u
SII161/0
C287 120P
C288 100U 16V
C289 C290 C291 C292 0.1u
R181 0
R182 680
R183 NC
C296 0.1u
R189 0
R190 0
R195 0
R199 0
R200 0
3 SCDT
3 DVI_PWRDN
EXT_RES
HDCP_EN#
SCDT
PDO#
PD#
RSVD
STAG_OUT
PIXS
SCLS
SDAS
BSN20
Q22
R201 NC
R202 NC
R203 10K
R204 10K
R205 NC
R206 10K
R207 NC/0
R208 NC
R209 NC
RX_SCL 9
RX_SDA 9
DVI_SCL_A 9
DVI_SDA_A 9
R210 NC/0
R215 NC/0
R219 0
R222 NC/0
1,3
RX_KSCL
RX_KSDA
VCC/SCK
GND/SDA
OGND/EXC
RESET#
CTL3
HS_DJTR
OCK_INV
RX2-
RX2+
RX1-
RX1+
RX0-
RX0+
RXC-
RXC+
ODCK
DE
HSYNC
VSYNC
R211 47
R212 47
R213 47
R216 47
IN1HS
IN1CLK 4,11
IN1PEN 4
IN1HS 4,11
IN1VS 4,11
5 TTL (Ch2)
3 HV (Ch2)
3 HV (Ch1)
C298 C299 C300 C301
NC/22P NC/22P NC/22P NC/22P
BE0 BE1 BE2 BE3 BE4 BE5 BE6 BE7
QE0 QE1 QE2 QE3 QE4 QE5 QE6 QE7 QE8 QE9 QE10 QE11 QE12 QE13 QE14 QE15 QE16 QE17 QE18 QE19 QE20 QE21 QE22 QE23
GE0 GE1 GE2 GE3 GE4 GE5 GE6 GE7
RE0 RE1 RE2 RE3 RE4 RE5 RE6 RE7
QO0 QO1 QO2 QO3 QO4 QO5 QO6 QO7 QO8 QO9 QO10 QO11 QO12 QO13 QO14 QO15 QO16 QO17 QO18 QO19 QO20 QO21 QO22 QO23
RP48 RP49 RP50 RP51 RP52 RP53
VB[2..9] 4,11
VG[2..9] 4,11
VR[2..9] 4,11
5 TTL (Ch1)
Reference method in circuit diagram
IN1CLK 4 , 11
(signal name) 4/12 11/12
(location of circuit page)
U51B 74HC123
R481 0
C466 1000p
C450 0.1u
D57 1N4148
D60 NC/1N4148
R464 220
R465 100K
C451 10U
Q63 MMBT3904L
PDWN_169 3
EP169

• MRT9883

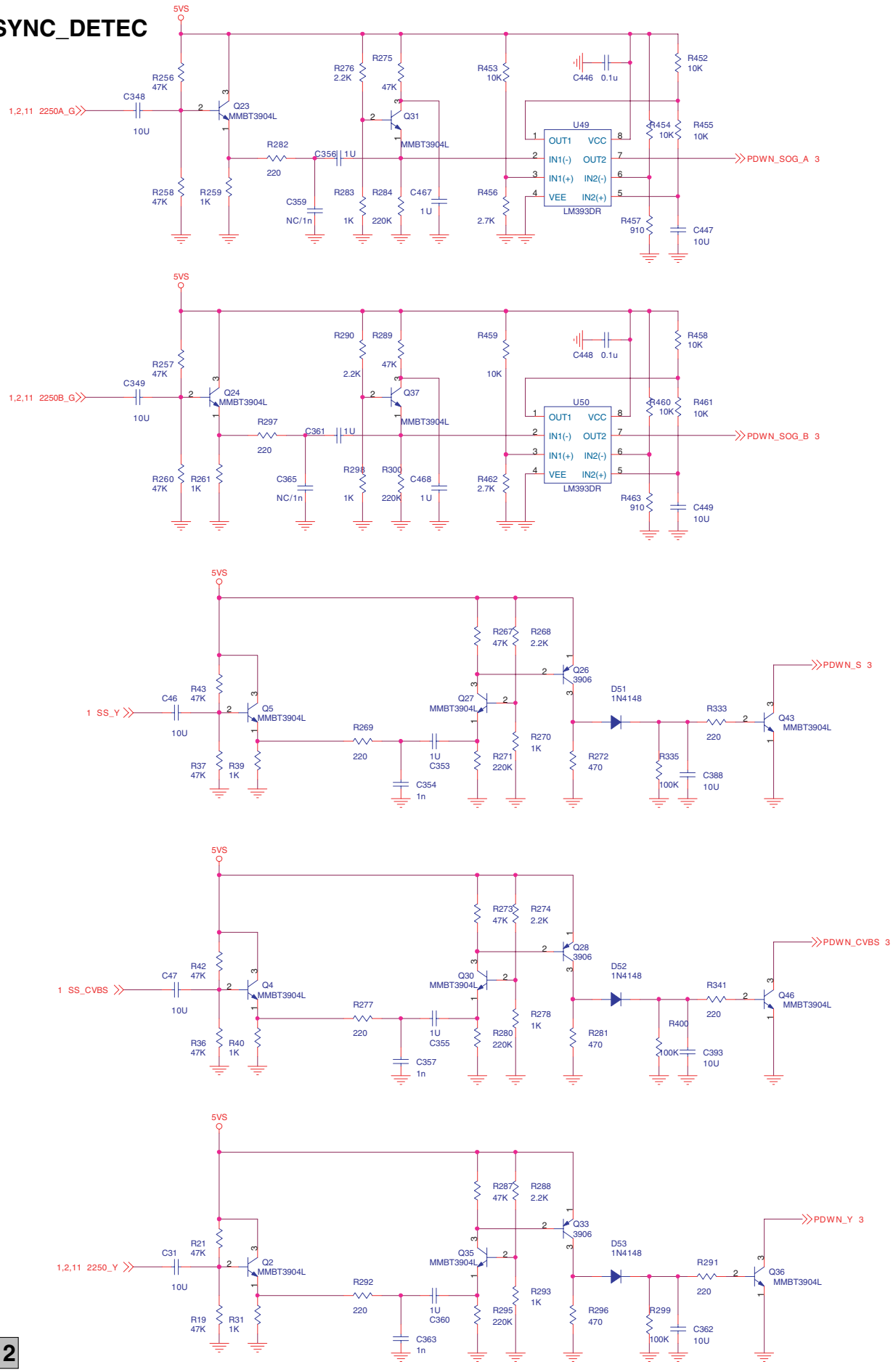




11/12


5VCC
U37
VIN
VOUT
GND
LD1117_33
C303
0.1U
25V K
C304
100U
16V
C309
0.1U
25V K
FB73
150_Ohm_600mA
C305
22U
C306
C307
C308
0.1uF
PVD_9883
FB75
150_Ohm_600mA
C315
22U
C316
C317
C318
C319
VDD_9883
FB76
150_Ohm_600mA
C325
22U
C327
C328
C329
C330
C331
C332
C333
VD_9883
U39
VDD_9883
VD_9883
PVD_9883
R239 0
R240 0
C336 0.047uF
C337 0.047uF
C338 0.047uF
R244 100
R246 100
R248 0
C339 0.001uF
C341
0.0082uF
R254 NC/1K
R255 NC/1K
MStart 9883
RP54
RP55
RP56
RP57
RP58
RP59
VR2
VR3
VR4
VR5
VR6
VR7
VR8
VR9
VR[2..9] 4,10
VG2
VG3
VG4
VG5
VG6
VG7
VG8
VG9
VG[2..9] 4,10
VB2
VB3
VB4
VB5
VB6
VB7
VB8
VB9
VB[2..9] 4,10
R245
R247
R249
R251
IN1CLK 4,10
IN1HS 4,10
IN1SOG 4
IN1VS 4,10
C345 0.1uF
C346 0.1uF
C347 NC/22U
C342 22P
C343 22P
C344 22P

• SYNC_DETEC



12/12

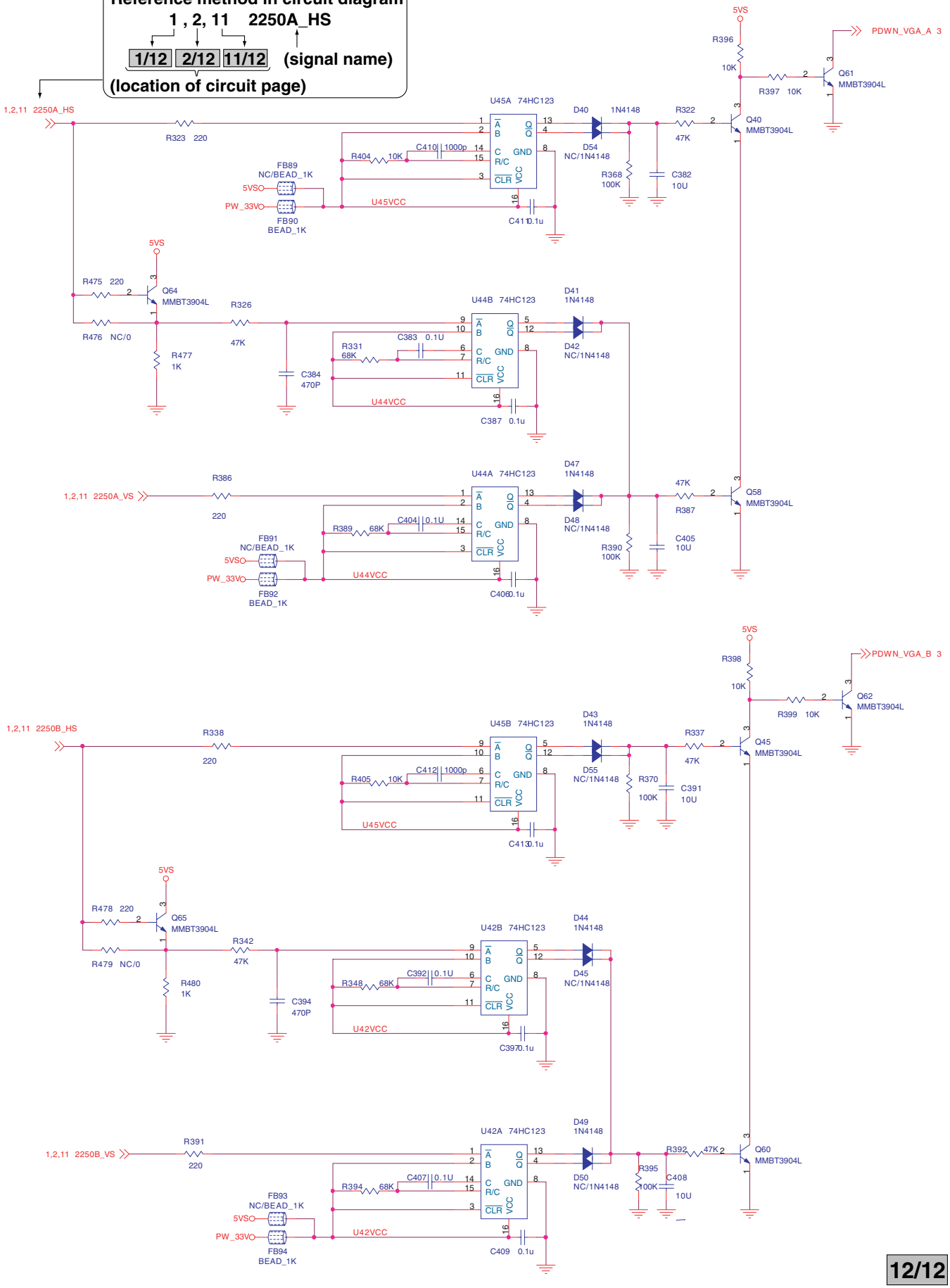
Note:

Reference method in circuit diagram

1 , 2, 11 2250A_HS

1/12 2/12 11/12 (signal name)

(location of circuit page)



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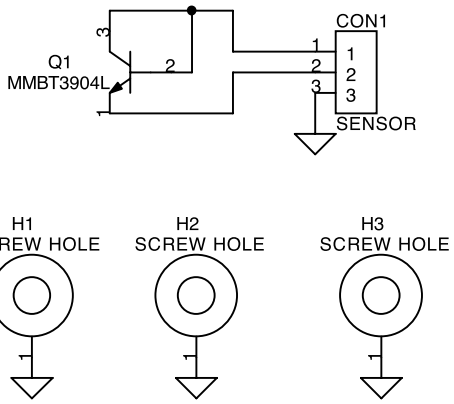
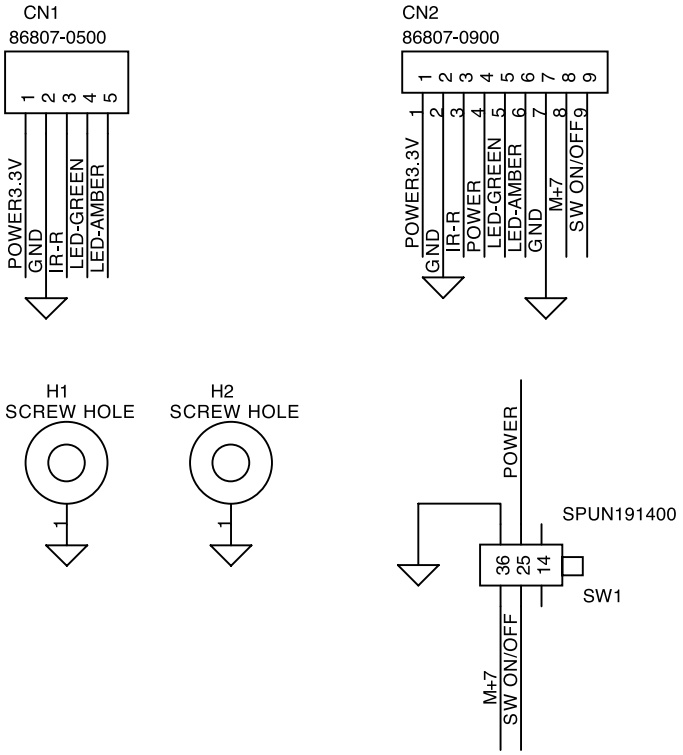
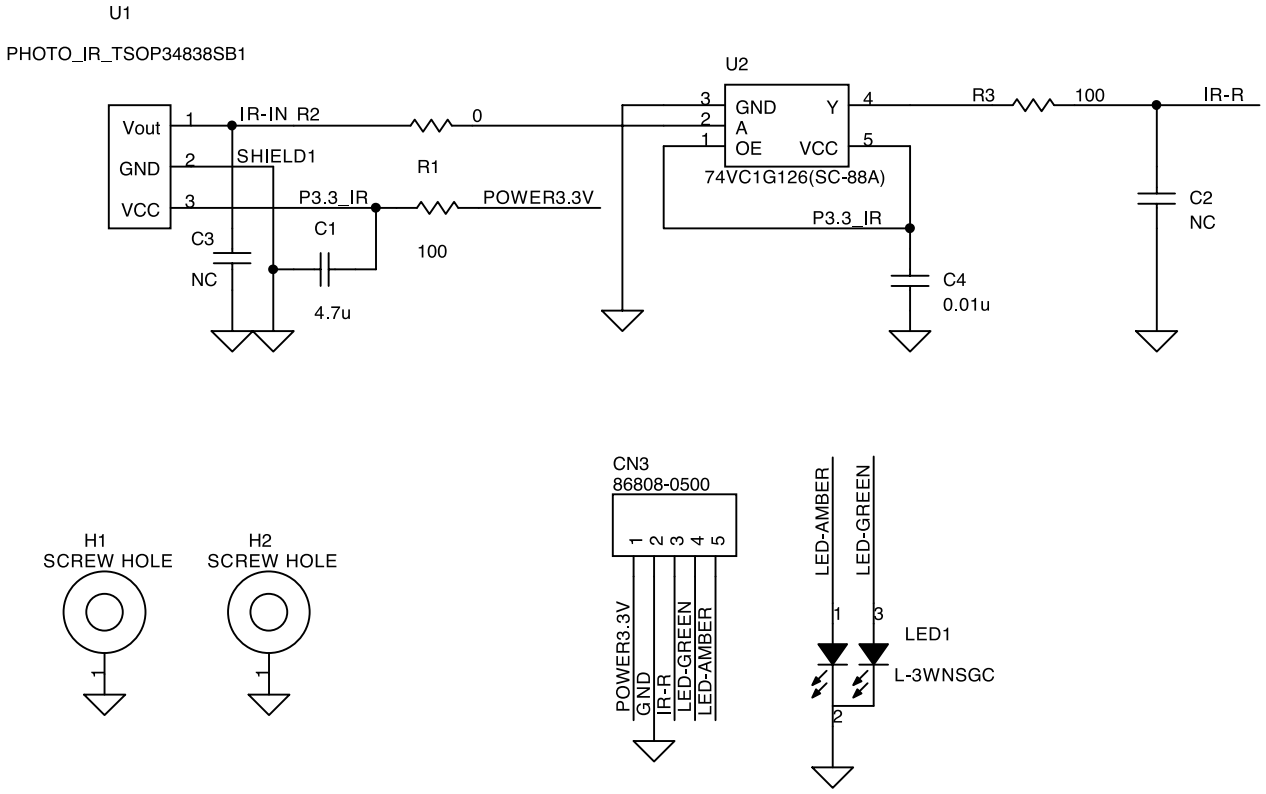
• Sensor Board



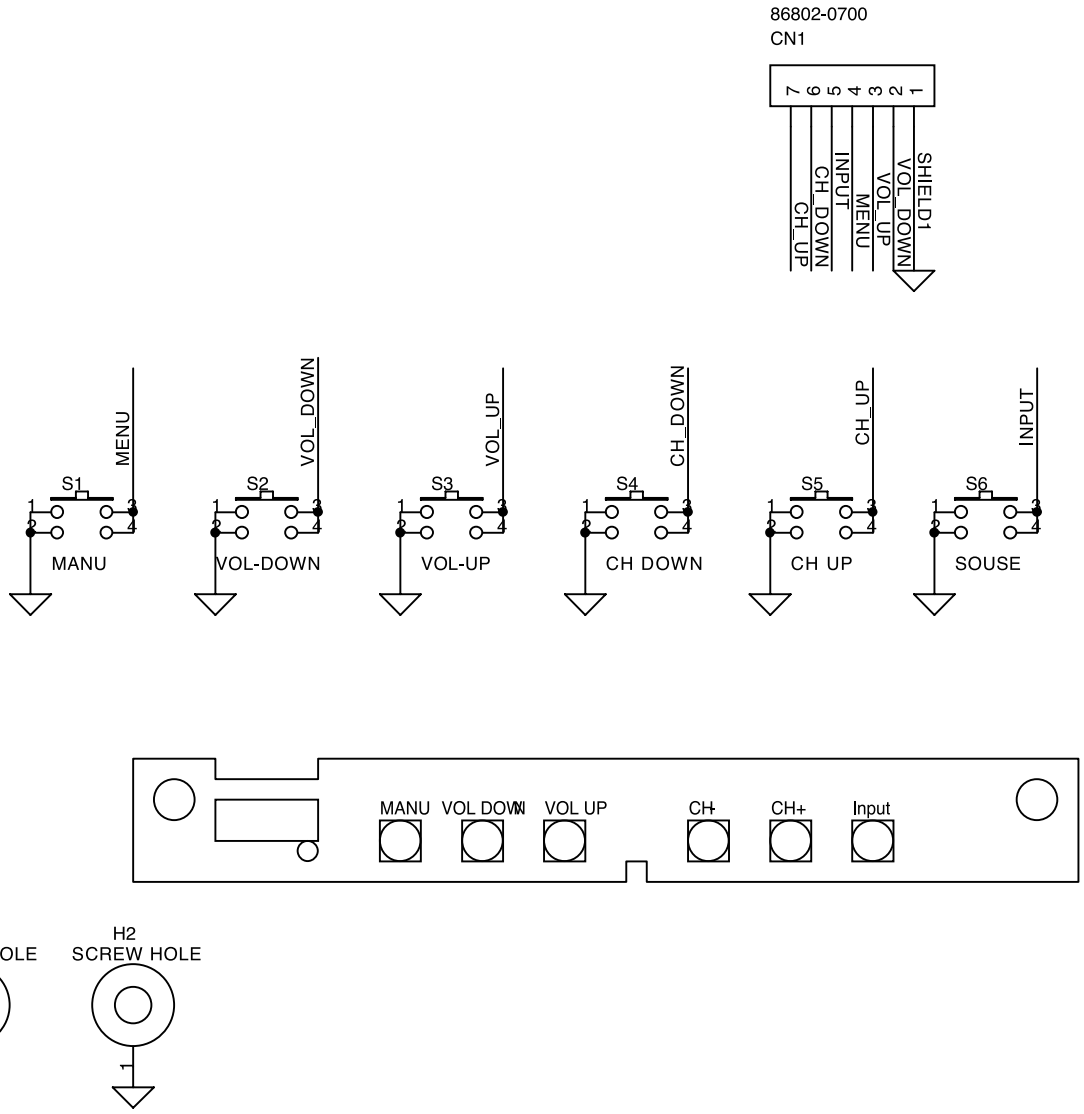
• Power Switch Board



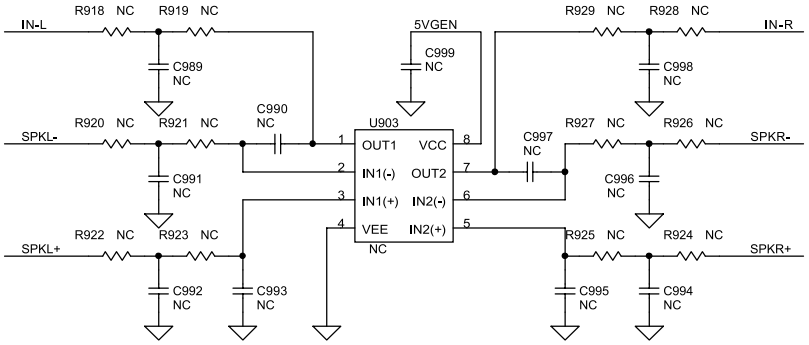
• IR Board

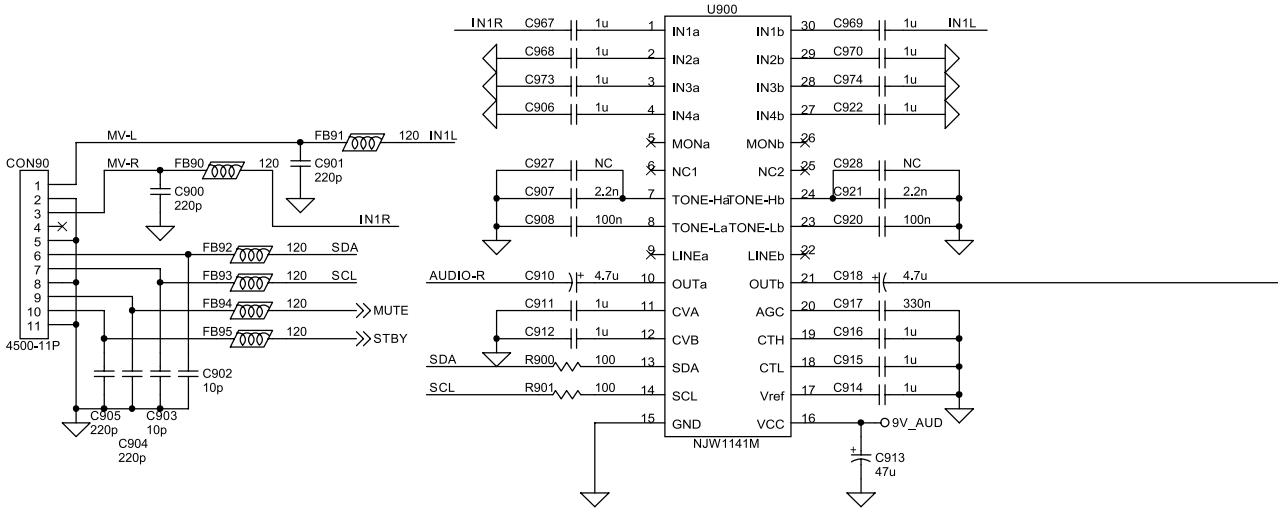


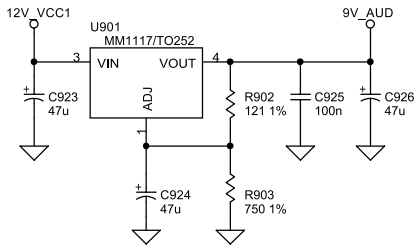
• Button

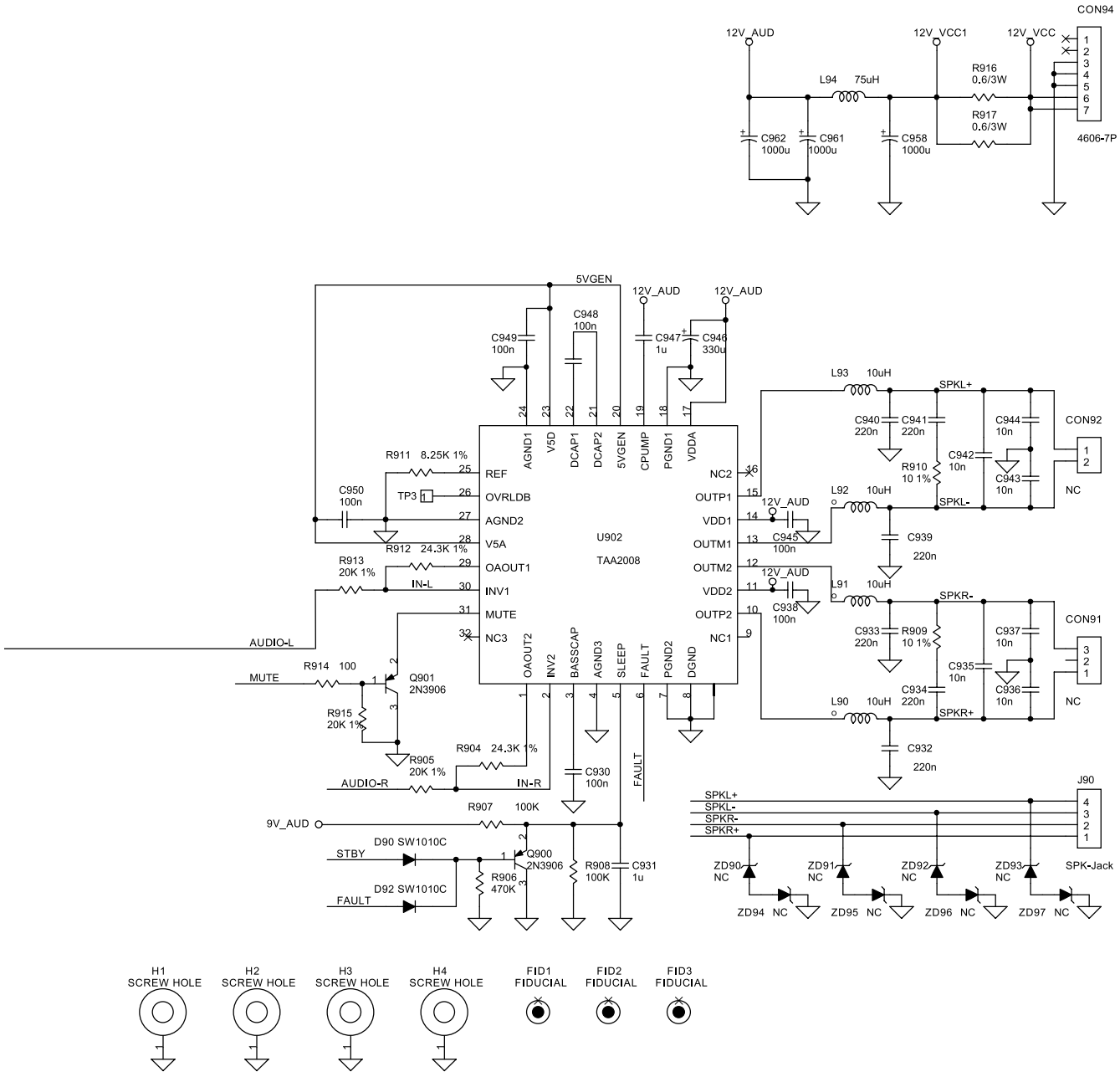

86802-0700
CN1
7 6 5 4 3 2 1
CH_UP
CH_DOWN
INPUT
MENU
VOL_UP
VOL_DOWN
SHIELD1
S1
MENU
MANU
S2
VOL_DOWN
VOL-DOWN
S3
VOL_UP
VOL-UP
S4
CH_DOWN
CH DOWN
S5
CH_UP
CH UP
S6
INPUT
SOUSE
MANU
VOL DOWN
VOL UP
CH-
CH+
Input
H1
SCREW HOLE
H2
SCREW HOLE

• Audio Board

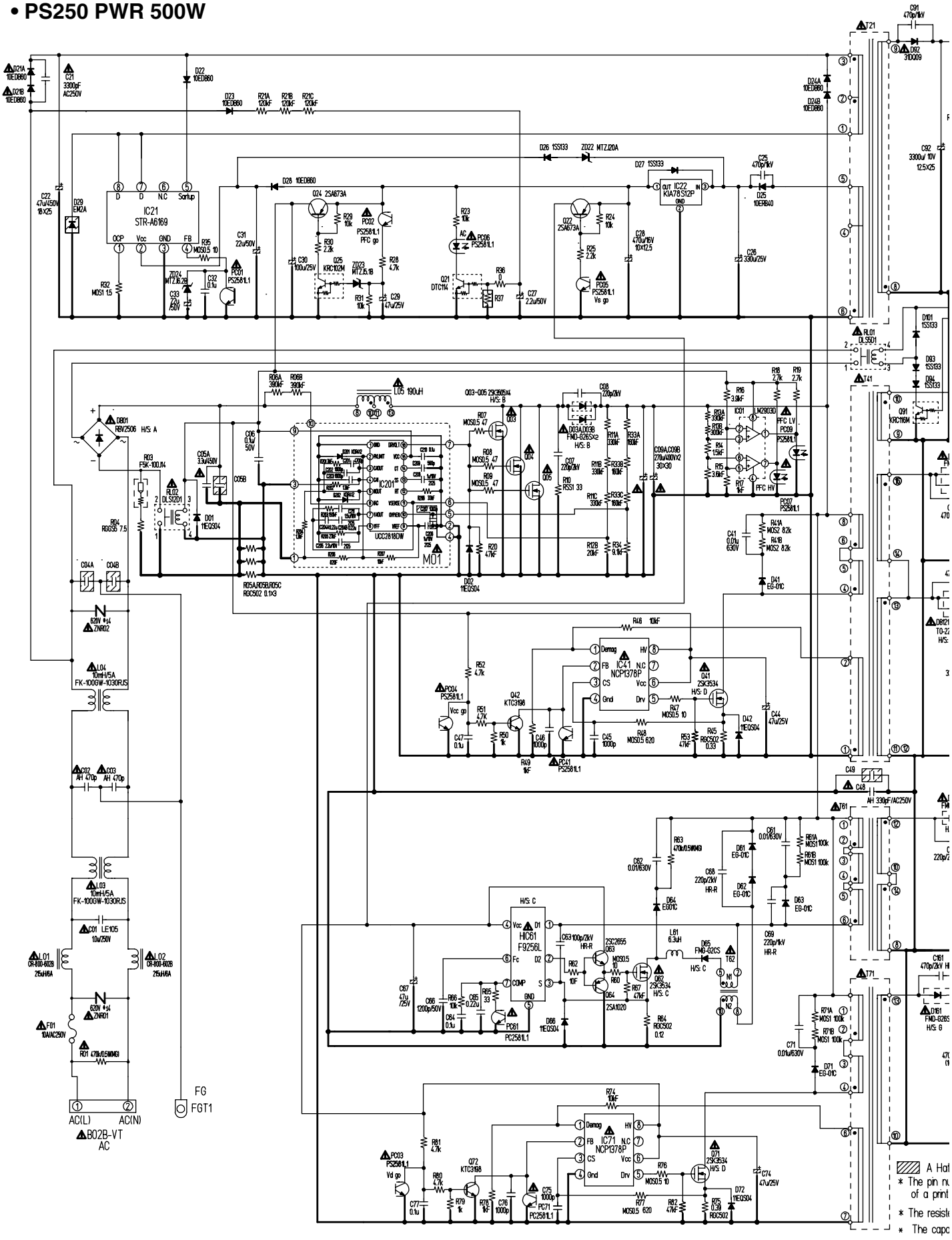

IN-L
SPKL-
SPKL+
IN-R
SPKR-
SPKR+
5VGEN
U903
OUT1
IN1(-)
IN1(+)
VEE
VCC
OUT2
IN2(-)
IN2(+)
NC
R918 NC
R919 NC
R920 NC
R921 NC
R922 NC
R923 NC
R929 NC
R928 NC
R927 NC
R926 NC
R925 NC
R924 NC
C989 NC
C990 NC
C991 NC
C992 NC
C993 NC
C999 NC
C997 NC
C996 NC
C998 NC
C995 NC
C994 NC

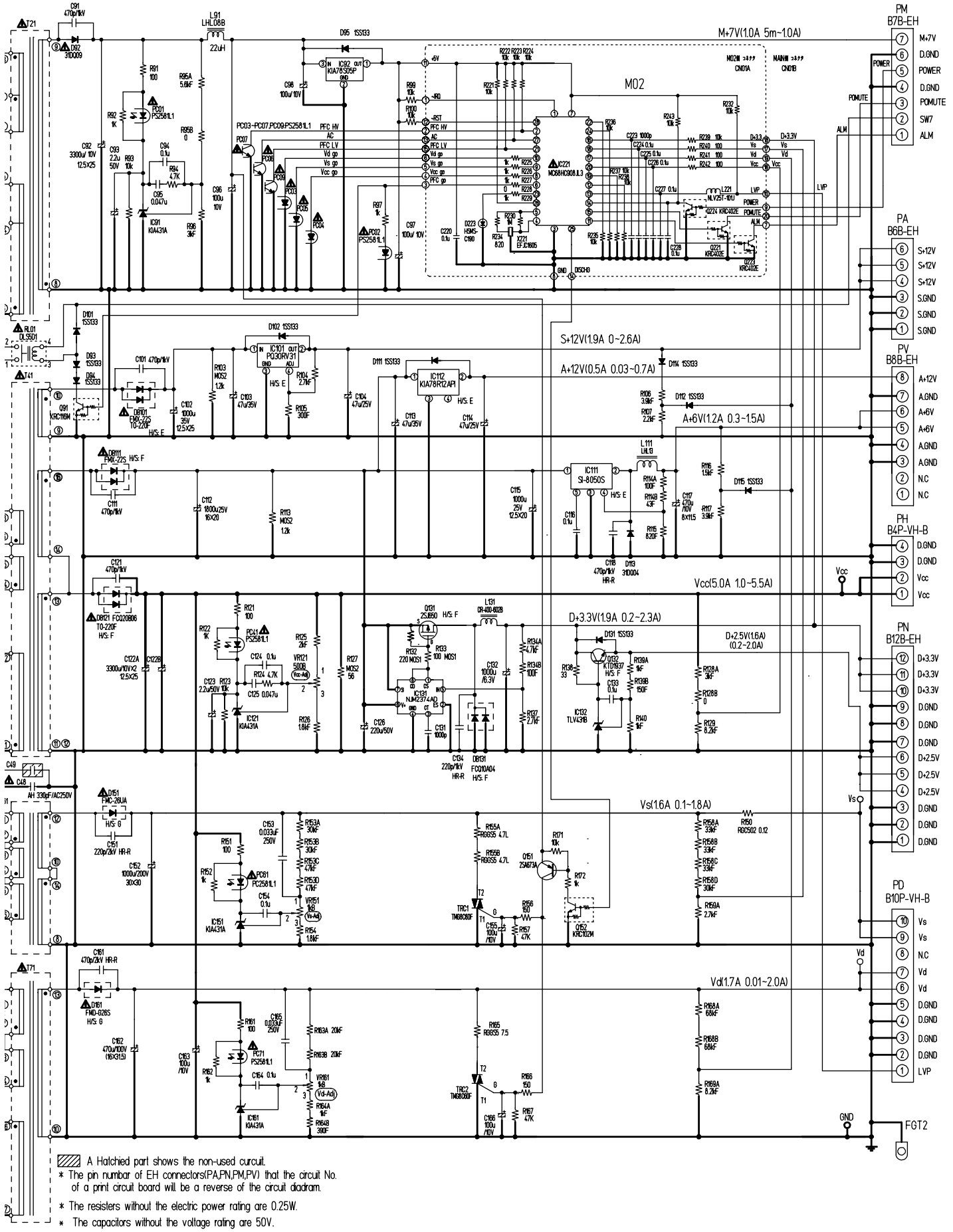

U900
NJW1141M
IN1R
IN1L
AUDIO-R
SDA
SCL
IN1a
IN2a
IN3a
IN4a
MONa
NC1
TONE-Ha
TONE-La
LINEa
OUTa
CVA
CVB
SDA
SCL
GND
IN1b
IN2b
IN3b
IN4b
MONb
NC2
TONE-Hb
TONE-Lb
LINEb
OUTb
AGC
CTH
CTL
Vref
VCC
9V_AUD
C967 1u
C968 1u
C973 1u
C906 1u
C927 NC
C907 2.2n
C908 100n
C910 4.7u
C911 1u
C912 1u
R900 100
R901 100
C969 1u
C970 1u
C974 1u
C922 1u
C928 NC
C921 2.2n
C920 100n
C918 4.7u
C917 330n
C916 1u
C915 1u
C914 1u
C913 47u
MV-L
MV-R
CON90
4500-11P
FB90
FB91
FB92
FB93
FB94
FB95
120
C900 220p
C901 220p
C902 10p
C903 10p
C904 220p
C905 220p
SDA
SCL
MUTE
STBY


12V_VCC1
9V_AUD
U901
MM1117/TO252
VIN
VOUT
ADJ
C923 47u
C924 47u
C925 100n
C926 47u
R902 121 1%
R903 750 1%


CON94
12V_AUD
12V_VCC1
12V_VCC
L94 75uH
R916 0.6/3W
R917 0.6/3W
C962 1000u
C961 1000u
C958 1000u
4606-7P
5VGEN
C948 100n
C949 100n
C947 1u
C946 330u
L93 10uH
SPKL+
C940 220n
C941 220n
C944 10n
C942 10n
C943 10n
CON92
NC
R910 10 1%
SPKL-
L92 10uH
C939 220n
C945 100n
L91 10uH
SPKR-
C933 220n
R909 10 1%
C937 10n
C935 10n
C936 10n
CON91
C934 220n
L90 10uH
SPKR+
C932 220n
R911 8.25K 1%
C950 100n
TP3
R912 24.3K 1%
R913 20K 1%
IN-L
AUDIO-L
R914 100
MUTE
Q901 2N3906
R915 20K 1%
R905 20K 1%
R904 24.3K 1%
AUDIO-R
IN-R
C930 100n
R907 100K
9V_AUD
D90 SW1010C
STBY
Q900 2N3906
R906 470K
R908 100K
C931 1u
D92 SW1010C
FAULT
U902
TAA2008
REF
OVRLDB
AGND2
V5A
OAOUT1
INV1
MUTE
NC3
AGND1
V5D
DCAP1
DCAP2
5VGEN
CPUMP
PGND1
VDDA
NC2
OUTP1
VDD1
OUTM1
OUTM2
VDD2
OUTP2
NC1
OAOUT2
INV2
BASSCAP
AGND3
SLEEP
FAULT
PGND2
DGND
J90
SPKL+
SPKL-
SPKR-
SPKR+
ZD90 NC
ZD91 NC
ZD92 NC
ZD93 NC
SPK-Jack
ZD94 NC
ZD95 NC
ZD96 NC
ZD97 NC
H1 SCREW HOLE
H2 SCREW HOLE
H3 SCREW HOLE
H4 SCREW HOLE
FID1 FIDUCIAL
FID2 FIDUCIAL
FID3 FIDUCIAL

• PS250 PWR 500W

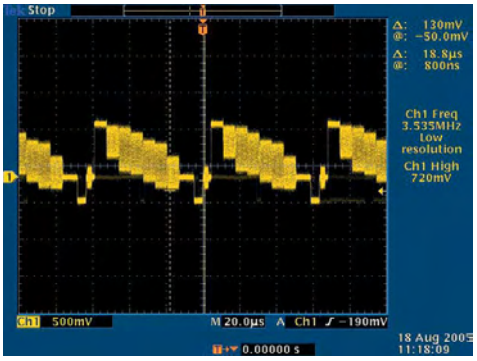



PM
B7B-EH
M+7V(1.0A 5m~1.0A)
M02
PA
B6B-EH
S+12V(1.9A 0~2.6A)
A+12V(0.5A 0.03~0.7A)
PV
B8B-EH
A+6V(1.2A 0.3~1.5A)
PH
B4P-VH-B
Vcc(5.0A 1.0~5.5A)
PN
B12B-EH
D+3.3V(1.9A 0.2~2.3A)
D+2.5V(1.6A)
(0.2~2.0A)
Vs(1.6A 0.1~1.8A)
PD
B10P-VH-B
Vd(1.7A 0.01~2.0A)
FGT2
A Hatchied part shows the non-used curcuit.
* The pin number of EH connectors(PA,PN,PM,PV) that the circuit No. of a print circuit board will be a reverse of the circuit diadram.
* The resisters without the electric power rating are 0.25W.
* The capacitors without the voltage rating are 50V.

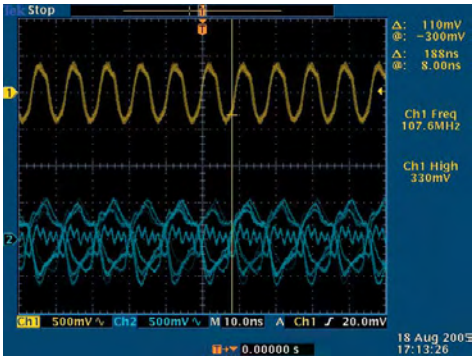
3.6 WAVEFORMS

Note : The encircled numbers denote measuring point in the schematic diagram.

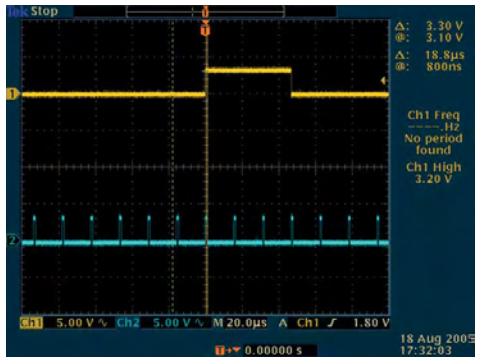
① CVBS (SS_CVBS)
V: 500mV/div. H: 20usec/div.



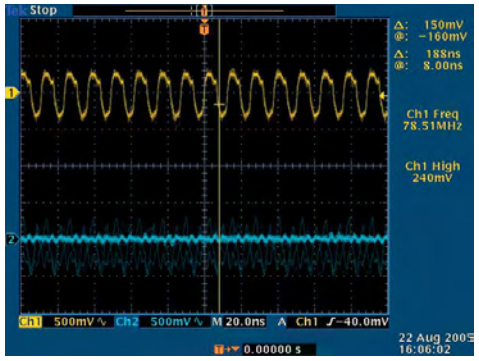
② DVI (Ch1: RXC-, Ch2: RX1+)
V: 500mV/div. H: 10nsec/div.



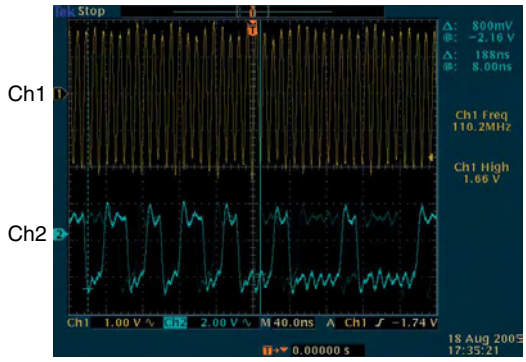
③ HV (Ch1: IN1VS, Ch2: 1N1HS)
V: 5V/div. H: 20usec/div.



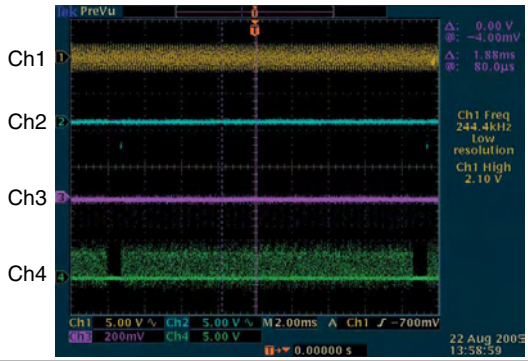
④ LVDS (Ch1: LVCK+, Ch2: LV0+)
V: 500mV/div. H: 20nsec/div.



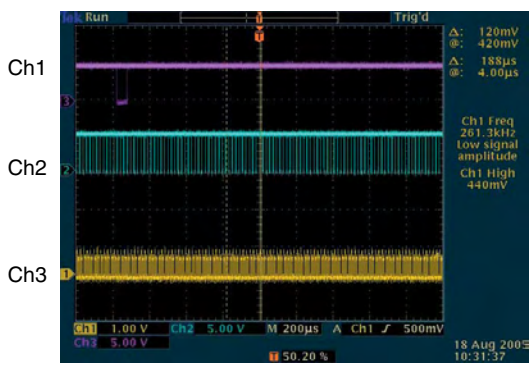
⑤ TTL (Ch1: VG2, Ch2: IN1CLK)
Ch1: V: 1V/div. Ch2: V: 2V/div. H: 40nsec/div.



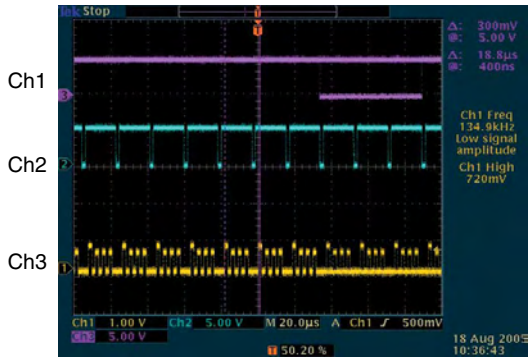
⑥ TTL2 (Ch1: DCLK, Ch2: DVS, Ch3: DHS, Ch4: DGE0)
Ch1: V: 3V/div. Ch2: V: 5V/div. Ch3: V: 200mV/div. Ch4: V: 5V/div. H: 2msec/div.



⑦ VGA1 (Ch1: V1, Ch2: HS_A, Ch3: VS_A)
Ch1: V: 1V/div. Ch2: V: 5V/div.H: 200usec/div.

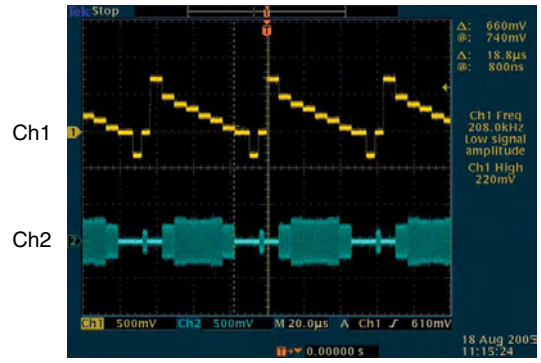


⑧ VGA2 (Ch1: V4, Ch2: HS_B, Ch3: VS_B)
Ch1: V: 1V/div. Ch2: V: 5V/div.H: 20usec/div.

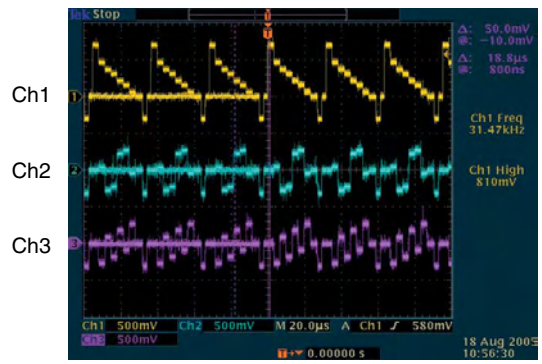


Note : The encircled numbers denote measuring point in the schematic diagram.

⑨ S-VIDEO (Ch1: SS_Y, Ch2: SS_C)
V: 500mV/div. H: 20usec/div.



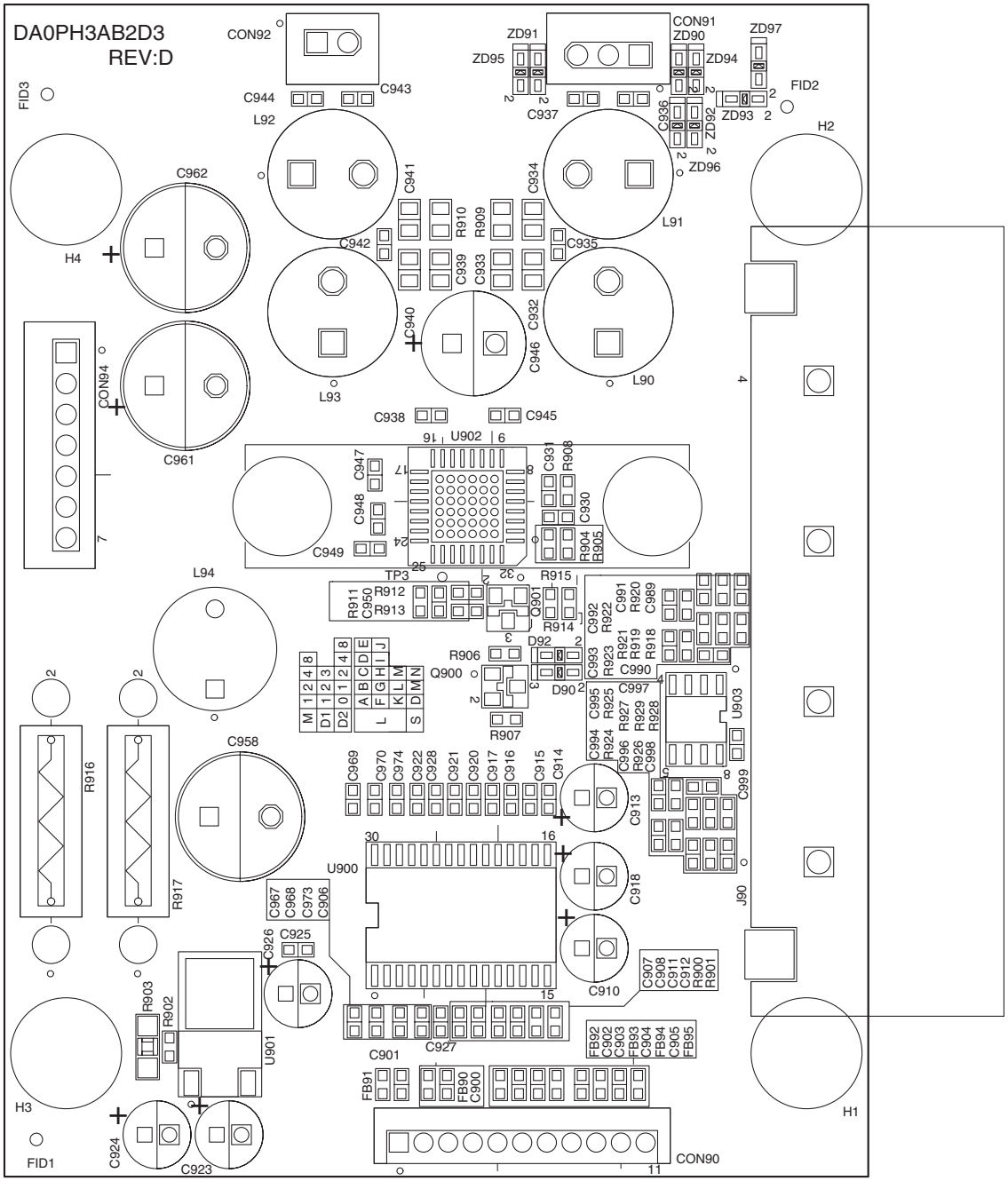
⑩ YpBPr (Ch1: Y, Ch2: Pb, Ch3: Pr)
V: 500mV/div. H: 20usec/div.



4. PCB DIAGRAM

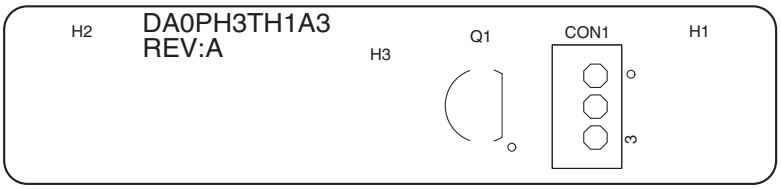
AUDIO BORD ASSY

SIDE A

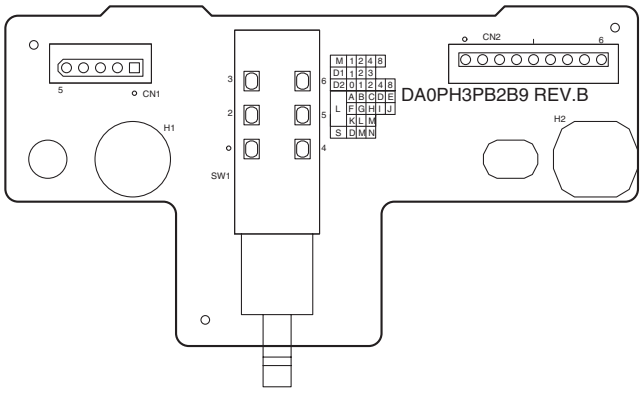


SENSOR BORD ASSY

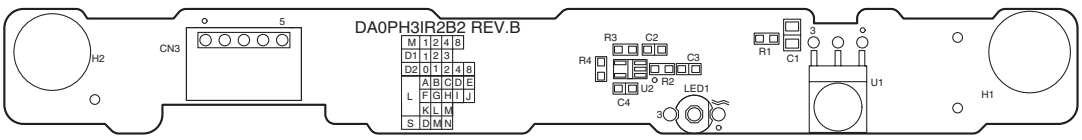
SIDE A



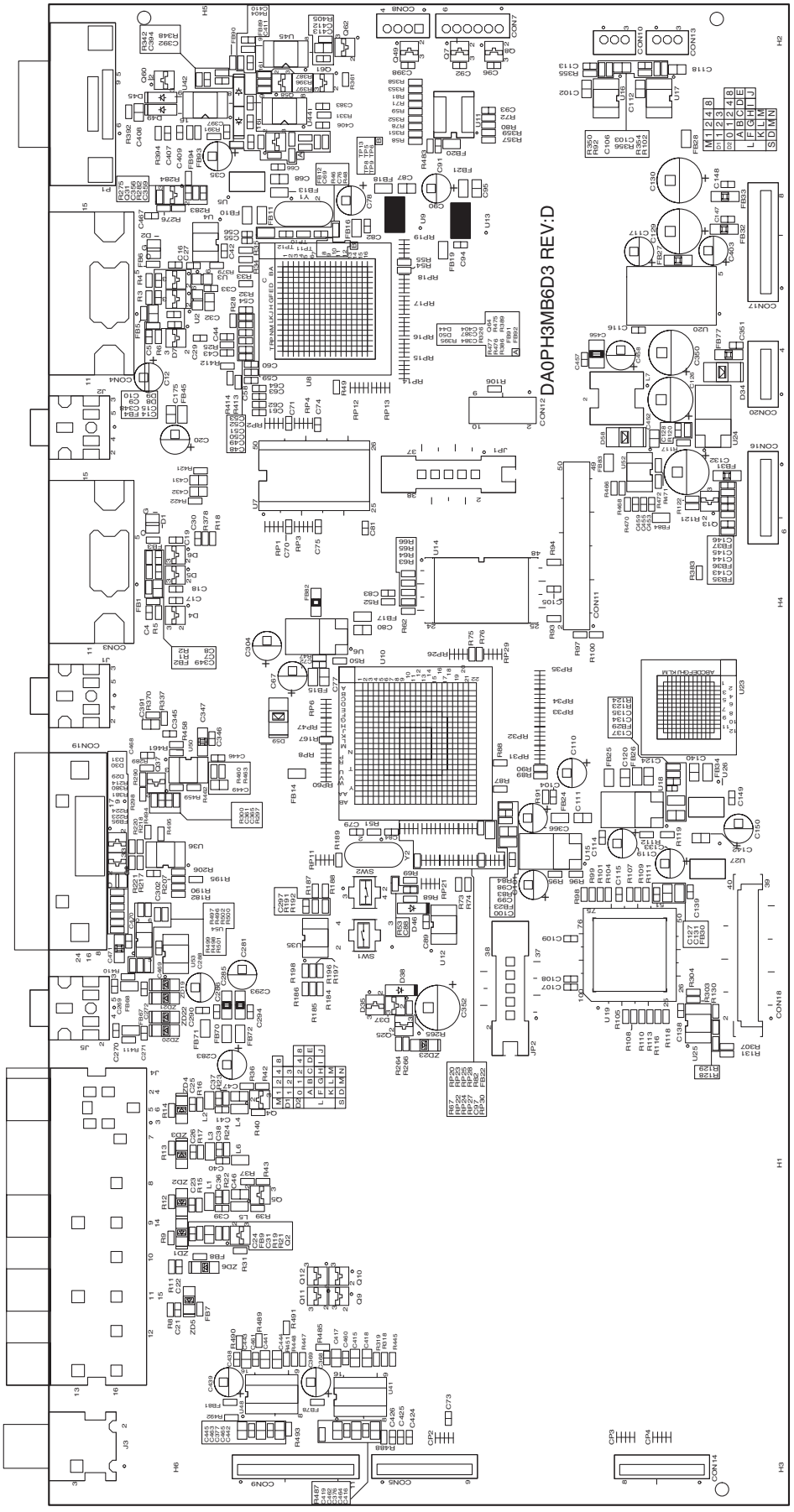
POWER SWITCH BORD ASSY



IR BORD ASSY



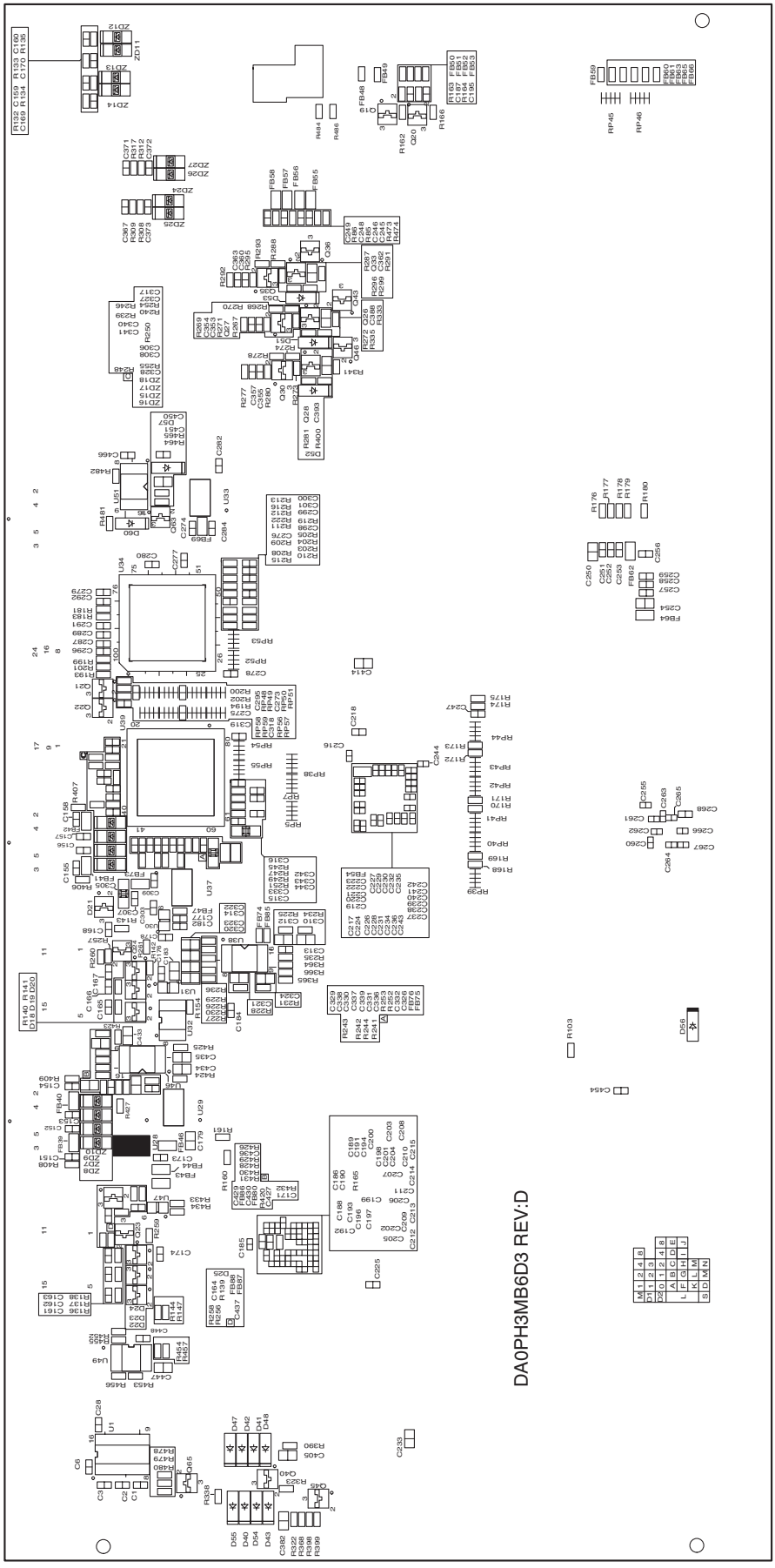
MAIN BORD ASSY



SIDE A

MAIN BORD ASSY

SIDE B



5. PCB PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part.*

Mark	No.	Description	Part No.
		LIST OF WHOLE PCB ASSEMBLIES	
		PH3 M/B ASSY (DVI)	21PH3MB0059
NSP		PH3 M/B C/S ASSY(FOR PH4)	31PH4CS0012
NSP		PH3 M/B S/S ASSY(FOR PH4)	41PH4SS0015
		PH3 AUDIO BOARD ASSY	36PH3AB0003
		PH3 IR/B ASSY	35PH3IB0009
		PH3 POWER_SW/B ASSY	34PH3PB0000
		PH3 BUTTON/B ASSY	33PH3BB0005
		PH3 SENSOR/B ASSY	3LPH3SB0001

* Please repair with Assy Service part when the following individual service parts are unavailable.

Mark	No.	Description	Part No.
		PCB M/B ASSY	
		MISCELLANEOUS	
	FB47-FB53,FB59-FB66	EMI FBMA-11-160808-601A10T (600,1A)EP	CX160808513
	FB39-FB44,FB46,FB54-FB58	EMI FBMA-11-201209-601A20T (600,2A)EP	CX201209716
	D40-D41,D43,D47,D51-D53,D56	DIODE,SMD LL4148PT(75V,0.15A) EP	BCLL4148Z19
	D18-D25	DIODE ZENER MMBZ5232BPT(5.6V,SOT23)EP	BD005232Z15
	ZD7-ZD18	DIODE SMD ZENER MMGZ5232BPT(5.6V)EP	BD005232Z23
	Q19-Q20,Q23-Q24,Q27,Q30	TRANS SMD MMBT3904(40V,200MA)SOT23 EP	BA039040039
	Q35-Q36,Q40,Q43,Q45-Q46,Q65	TRANS SMD MMBT3904(40V,200MA)SOT23 EP	BA039040039
⚠	U28-U29	IC(3P) AP1117E33LA (SOT-223)EP	AL011733006
	U30-U31	IC(6P) NC7WZ14P6X_NL(SC70-6)EU	AL07WZ14011
	U32	IC EEPROM(8P) 24LC02BT-I/SNG(2K,SOIC)EP	AKE3K8B0Y50
	Q26,Q28,Q33	TRAN SMD MMBT3906LT1G(40V,200MA)EP	BA039060013
	U1	IC(16P) MAX232DR (SOIC) EP	AL000232019
		IC(8P) LM393DR2G (SO-8) EP	AL000393047
		PH3 M/B S/S ASSY	
		MISCELLANEOUS	
	L1-L3	IND 560NH 230MA +-5% LLQ2012-FR56J EP	CV+5603JN03
	L4-L6	IND SMD 10NH +-5% 300MA (HK212510NJ-T)EU	CVA1003JZ17
	FB1-FB9	EMI FBMA-10-160808-300T (30,300MA)EP	CX808300019
	FB78,FB81,FB90,FB92,FB94	EMI FBMA-11-160808-601A10T (600,1A)EP	CX160808513
	FB35-FB37	EMI FBMA-11-160808-121-A20T (120,2A)EP	CX808121114
	FB10-FB19,FB21-FB26,FB29,FB34,FB45	EMI FBMA-11-201209-601A20T (600,2A)	CX201209716
	FB31-FB33,FB77	EMI FBMA-11-321611-601-A30T (600,3A)EP	CX611601012
	FB28,FB30	EMI FBMA-11-201209-121-A50T (120,5A)EP	CX209121010
	U10	IC (379P)PW318B-10L(PBGA)EP	AJ003180T05
	U8	IC (256P)PW2300-10L(LFBGA)EP	AJ023000T02
	U23	IC DDR SDRAM EM6A9320BI-5MG (FBGA)EP	AKD37W-T-16
	U7	IC SDRAM (50P)16M EM636165TS-6G (TSOPII)EP	AKD24G-K-06
	U14	IC,FLASH ROM (48P)29LV800BTTC-70G (TSOP)EP	AKE35ZAKZ16
	U19	IC (100P) EP387A (48BIT,112M,LQFP) EP	AJ00387#F00
	U19	IC (100P) DS90C387AVJD (48BIT,TQFP) EP	AJ003870H04
	U25	IC (8P) DS90LV018ATM (SOP) EP	AJ000180009
⚠	U16-U17	IC (8P) G994P1U (SOP) EP	AL000994008
	U11	IC (20P) G791SFU (SSOP) EP	AL000791C01
	U12	IC EEPROM (8P) 24LC32A-I/SNG (32K,400KHZ)EP	AKE31ZB0Y05
	U4	IC EEPROM(8P) 24LC02BT-I/SNG(2K,SOIC) EP	AKE3K8B0Y50
	U2-U3	IC(6P) NC7WZ14P6X_NL(SC70-6) EU	AL07WZ14011

Mark	No.	Description	Part No.
	Q2,Q4-Q5,Q13,Q25,Q31,Q37,Q58	TRANS SMD MMBT3904(40V,200MA)SOT23 EP	BA039040039
	Q60-Q62,Q64	TRANS SMD MMBT3904(40V,200MA)SOT23 EP	BA039040039
	Q10,Q12	TRANS MOS CH2507SPT(60V,0.25A)SOT23 EP	BAM25070017
	D4-D9	DIODE SMD SW21570PT(VRRM:85V,150MA) EP	BC021570Z18
	D1-D2	DIODE SMD CHN202UPT(80V,100MA) EP	BC000202Z28
	D38,D44,D46,D49	DIODE,SMD LL4148PT(75V,0.15A) EP	BCLL4148Z19
	D34,D59	DIODE SSM14PT(40V,1A)SCHOTTK SMA EP	BC0SSM14Z30
	ZD1-ZD6	DIODE SMD ZENER MMGZ5232BPT(5.6V) EP	BD005232Z23
⚠	U6,U15,U18,U24	IC (3P)SMD AP1084DLA(T0-252) EP	AL001084099
⚠	U5,U9	IC (3P) AP1117E18LA (SOT-223) EP	AL011718007
⚠	U26	IC (3P) AP1117E25LA (SOT-223) EP	AL011725020
⚠	U13,U27	IC (3P) AP1117E33LA (SOT-223) EP	AL011733006
	CON18	CONN SMD HEADER 40P 2R MS (P1.25,H4.8) EP	DFHD40MS976
	ZD23	DIODE ZENER SMD MMGZ5240BPT(10V) EP	BDGZ5240Z14
	D35,D37	DIODE,SMD CH420DPT(40V,0.1A,SHTKY) EU	BCCH420DZ14
	U42,U44-U45	IC (16P) 74HC123PW (TSSOP) EU	ALHC0123K07
	U50	IC (8P) LM393DR2G (SO-8) EP	AL000393047
	U41,U48	IC (16P) MAX4581CSE+ (SOIC) EP	AL004581000

PH3 M/B C/S ASSY

MISCELLANEOUS

	CON3-CON4	CONN D-SUB 15P 3R FR(P2.29,H12.42)EU	DFDB15FR037
	P1	CONN D-SUB 9P 2R MR(P2.77,H12.5)BLACK EP	DFDS09MR0A5
	J3	CONN DIP RCA JACK 3P 2R FR(H27)R,W EU	DFRJ06FR020
	J4	CONN DIP DIN 4P 2R FR(H27.5)Y,G,B,R EU	DFDN04FR000
	J1-J2	CONN DIP PHONE JACK 5P FR(H10) LIME EP	DFTJ05FR380
	CON10,CON13	CONN DIP HEADER 3P 1R MS(P2.0,H6.0)EP	DFHD03MS673
	CON14	CONN DIP HEADER 8P 1R MS(P2.0,H6.0)EP	DFHD08MS781
	CON5	CONN DIP HEADER 9P 1R MS(P2.0,H6)EP	DFHD09MS441
	CON9	CONN DIP HEADER 11P 1R MS(P2.0,H6)EP	DFHD11MS112
	CON16	CONN DIP HEADER 6P 1R MS(P2.5,H7)EP	DFHD06MS740
	CON17	CONN DIP HEADER 8P 1R MS(P2.5,H7)EP	DFHD08MS463
	Y1	XTAL DIP 27MHZ (20PPM,20PF,9B27000100)EP	BG627000220
	Y2	XTAL 14.318MHZ(20PPM,16PF,9B14300511)EP	BG614318188
	CON7	CONN DIP HEADER 6P 1R MS(P2.0,H6.0)EP	DFHD06MS758
	CON20	CONN DIP HEADER 4P 1R MS(P2.5,H7)EP	DFHD04MSA71

PH3 AUDIO BOARD ASSY

MISCELLANEOUS

	D90,D92	DIODE SMD SW1010CPT(100V,100MA) EP	BC001010Z17
	U900	IC (30P) NJW1141M-#ZZZB (SDMP) EP	AL001141017
⚠	U901	IC (3P) MM1117DTA(TO-252)EP	AL0011170W7
⚠	U902	IC (32P) TAA2008(QFN)EP	AL002008001
	FB90-FB95	EMI FBMA-11-160808-121-A20T (120,2A) EP	CX808121114
	Q900-Q901	TRAN SMD MMBT3906LT1G (40V,200MA) EP	BA039060013
	C946	CAP ELEC 330U 16V (+-20%,105C,8*11,2000HR	CC73303MD51
	L90-L93	IND DIP 10UH+-10% 2A (SL0912T-100K-1-N) EP	CV01020KD17
	C958,C961-C962	CAP ELEC 1000U 16V (20%,105C,10*16) EP	CC81003MD81
	L94	IND DIP 75UH +-10% 3A EP	CV07530KD24
	CON94	CONN DIP HEADER 7P 1R MS (P2.5,H7)L-F	DFHD07MS485
	CON90	CONN DIP HEADER 11P 1R MS(P2.0,H6) L-F	DFHD11MS091
	J90	CONN DIP SPK JACK 4P FR(H20,P13) EP	DFRJ04FR039
		HEAT SINK A/B PH3(FBPH3007 REV 3A)	FBPH3007017
		SCREW M3*6-P(BNI)	MS30060PBA5

PCB(IR/B) PH3 IR/B ASSY

MISCELLANEOUS

	U2	IC (5P) 74LVC1G126GW (SC-88A) EP	AL1G0126023

Mark No.	Description	Part No.
PH3 IR/B ASSY		
MISCELLANEOUS		
U1	LED DIP (3P) IR RECIVER(B)TSOP34840SB1 EP	BEBK0037D01
CN3	CONN DIP HEADER 5P 1R MR (P2.0,H5) EP	DFHD05MR0A3
PH3 POWER_SW/B ASSY		
MISCELLANEOUS		
CN1	CONN DIP HEADER 5P 1R MS(P2.0,H6.6) EP	DFHD05MS052
SW1	SWITCH PUSH BUTTON DIP 6P SPUN191400 EU	DHP19140009
PCB(BUTTON/B)PH3 BB ASSY		
MISCELLANEOUS		
S1,S2,S3,S4,S5,S6	SWITCH PUSH BUTTON STS-017-A EP	DHPSTS01705
PH3 BUTTON/B ASSY		
MISCELLANEOUS		
CN1	CONN DIP HEADER 7P 1R MR(P1.25,H3.5) EP	DFHD07MR0A2
PCB SENSOR/B ASSY		
MISCELLANEOUS		
Q1	TRANSISTOR DIP 2N3904RLRAG(TO-92)EP	BAN39040D01
CON1	CONN DIP HEADER 3P 1R MS(P2.0,H6.0)EP	DFHD03MS673

6. ADJUSTMENT

• Service mode and other

	Service mode	Factory mode
User menu	The user setting data are held.	The user setting data reset to the default settings (factory levels).
Situation of operation	Soft ware version are displayed. Cumulative power-on time is displayed.	White balance adjustment is not required. _Basically, no adjustment is required for the service. _When you exchange M/B the white balance adjustment (W/B) is not required because that M/B of service part adjusted W/B by default settings.
To enter Service mode	To enter Service mode, simultaneously press the LEFT/- key and INPUT/SET key in the system power ON state.	To enter Service mode, simultaneously press the RIGHT/+key and VOL/- key in the system power ON state.
To exit the service mode	AC unplugs. If the servicet mode OSD is still displayed by pressing the menu button, the service mode is not exited yet.	AC unplugs. If the factory mode OSD is still displayed by pressing the menu button, the service mode is not exited yet.
Caution	If no signal is input to INPUT 1 or INPUT2(PC signal), the Service Mode menu(OSD) will be displayed while a moment but disappear immediately. And when no signal is input to any input connector of the system, the system enters Aging Mode.(In the Aging Mode, seven colors pattern is displayed alternately).	

6.1 SERVICE MODE

6.1.1 How to check the accumulated power-on time (This function is not available for models with Serial No. "US: EITY003774UC, GA: EITY002870EH" or before.)

• Service mode

To enter Service mode, simultaneously press the INPUT/SET key (Ⓐ) and LEFT/- key (Ⓑ) located at the lower left of the front panel of the unit. Then press the Menu key (Ⓒ) to display the Service Mode menu. To display the accumulated power-on time, select HOUR METER, using the CURSOR keys (Ⓓ) on the remote control unit. (See Figs. 1 and 2)

Notes: 1. If no signal is input to INPUT 1, the Service Mode menu will be displayed for an instant but disappear immediately. Supply signals from a PC to INPUT 1.
2. If no signal is input to any input connector of the unit, the system enters Burn-In mode.

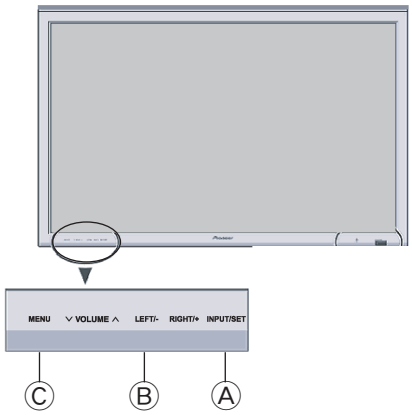


Fig. 1

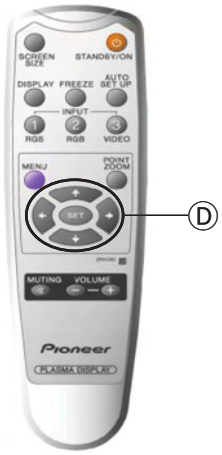


Fig. 2

6.2 FACTORY MODE

(User setting values will be reset to default/initial settings.)

6.2.1 How to enter Factory mode

To enter Service/Factory mode, simultaneously press the VOL- key (Ⓐ) and RIGHT+ key (Ⓑ) of the unit. (See Fig. 3)
Then press the Menu key (Ⓒ) to display the Service/Factory menu. The menu displays the data from the input sources that offer corresponding adjustment items.

Notes: 1. If no signal is input to INPUT 1, the Service Mode menu will be displayed for an instant but disappear immediately. Supply signals from a PC to INPUT 1.
2. If no signal is input to any input connector of the unit, the system enters Burn-In mode.

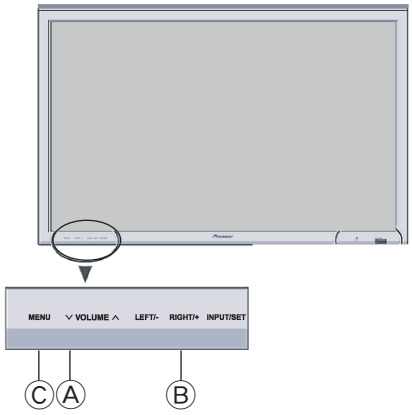
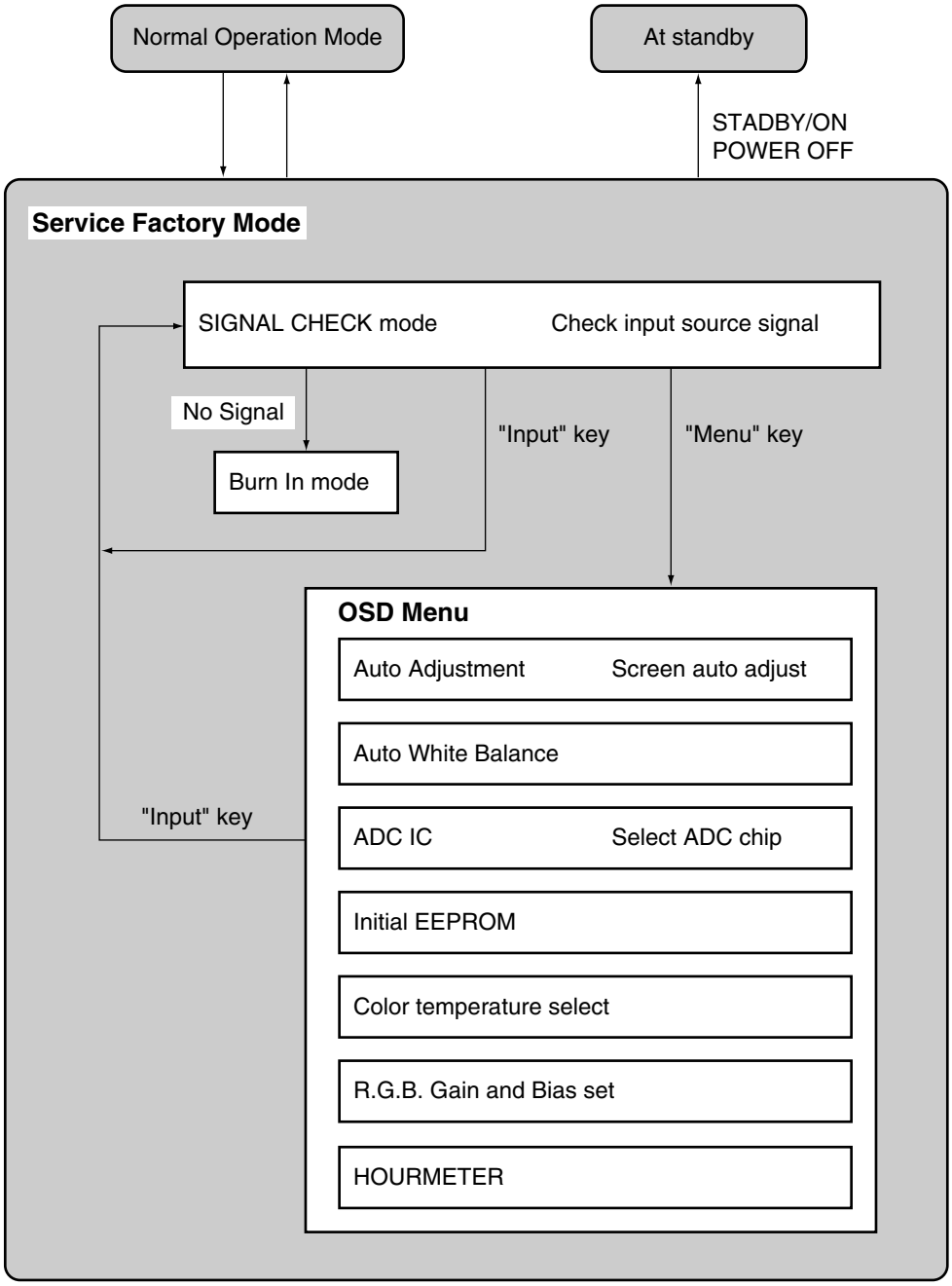


Fig. 3

6.2.2 State Transition Diagram of Factory mode



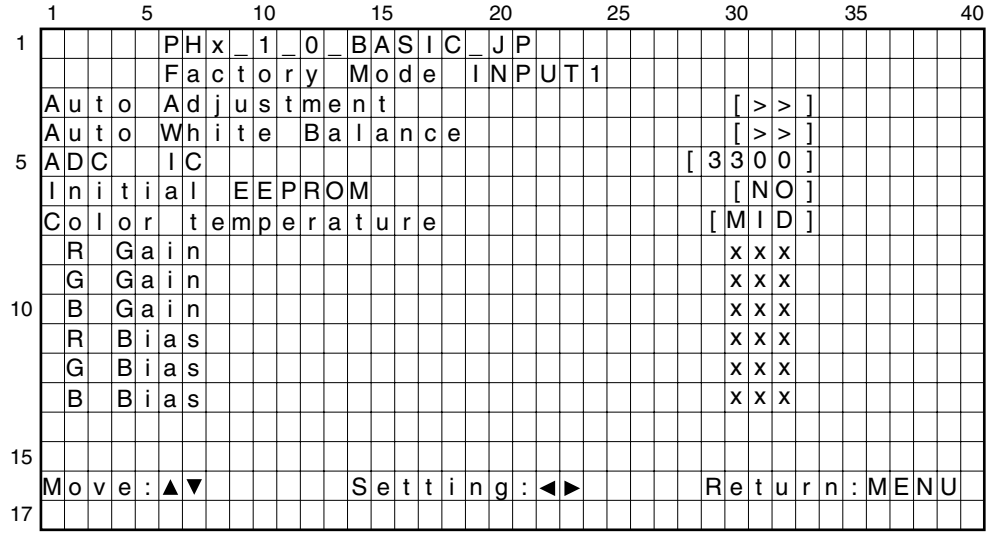
6.2.3 Service factory menu for adjustment of RGB source format in front device

This service factory mode is provided mainly to calibrate the gain and bias for three channels (R/G/B) in the front device when input source is RGB format, the calibration can be done by the automatic function (Auto White Balance) or manual to adjust each gain or bias value via R/G/B gain and Bias Items setting.

6.2.3.1 Basic Operation

- Connect the VGA source to input 1.
- Press the input 1 key on RUC or Input key in key pad.
- Press the menu key to open the Service factory Menu.
- Press the RIGHT+/RIGHT- key to select the adjustment item.
- Press the VOL+/VOL - key to execute the adjustment.
- Press the menu again to close the service factory mode.

6.2.3.2 Service Menu



6.2.3.3 Key command

Rem Code	Key Name	Key Pad	Function	Remarks
AA0F	INPUT 1	INPUT/SET	Choose the input to input Source1	
AA8A	SET	MENU	Function Set	
AA8B	MENU	MENU	Open/Close the MENU	
AA96	▲	RIGHT+	Select the upper item	
AA95	►	VOL +	Execute the function	
AA94	◄	VOL-	Execute the function	
AA97	▼	RIGHT-	Select the lower item	
AA1C	STANDBY/ON		Power Off and Exit the Service factory Mode	

6.2.3.4 Timing mode and pattern for the auto white balance function

Timing Mode : 1024 x768 @ 16 Hz
Test Pattern : 16 Gray

6.2.3.5 Description of Adjustment Item

Item	Description	Adjustment Range	Remarks
PHX_1_0_BASIC_JP	Current F/W Version	None	
Service factory Mode INPUT1	Service factory Mode with INPUT1	None	
Auto Adjustment	Execute the phase, clock and position adjustment automatically	Enable/Disable	
Auto White Balance	Execute the gains and biases adjustment for R/G/B three Channels in ADC device	Enable/Disable	
ADC IC	To select which device is selected for Auto White Balance	PW3300/AD9883	
Initial EEPROM	Execute the initial setting of EEPROM device	Yes/No	
Color Temperature	Change the color temperature setting value.	Low/Middle-Low/Middle /Middle-High/High	
R-GAIN	Gain value for Red Channel of ADC device	0~255	
G-GAIN	Gain value for Green Channel of ADC device	0~255	
B-GAIN	Gain value for Blue Channel of ADC device	0~255	
R-BIAS	Black level for Red Channel of ADC device	0~255	
G-BIAS	Black level for Green Channel of ADC device	0~255	
B-BIAS	Black level for Blue Channel of ADC device	0~255	

6.2.4 Service factory menu for color temperature adjustment

This service factory mode is provided mainly to adjust the gain and bias value for each color temperature via R/G/B gain and bias adjustment items.

6.2.4.1 Basic Operation

- Connect the DVI source to input 3.
- Press correspond input key on RUC or INPUT/SET key (Ⓐ) to select the input source.
- Press the Menu key (Ⓑ) to open the Service factory Menu.
- Press the RIGHT+/RIGHT- key (Ⓒ) to select the adjustment item.
- Press the VOL+/VOL - (Ⓓ) to execute the adjustment.
- Press the Menu key (Ⓑ) again to close the service factory mode. (See Fig. 4)

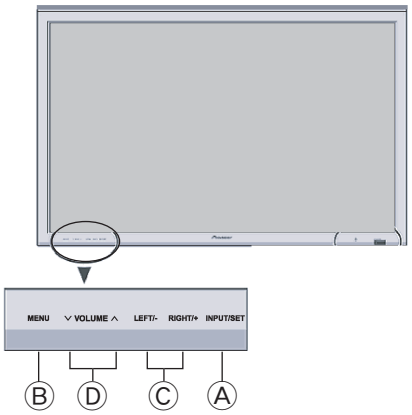
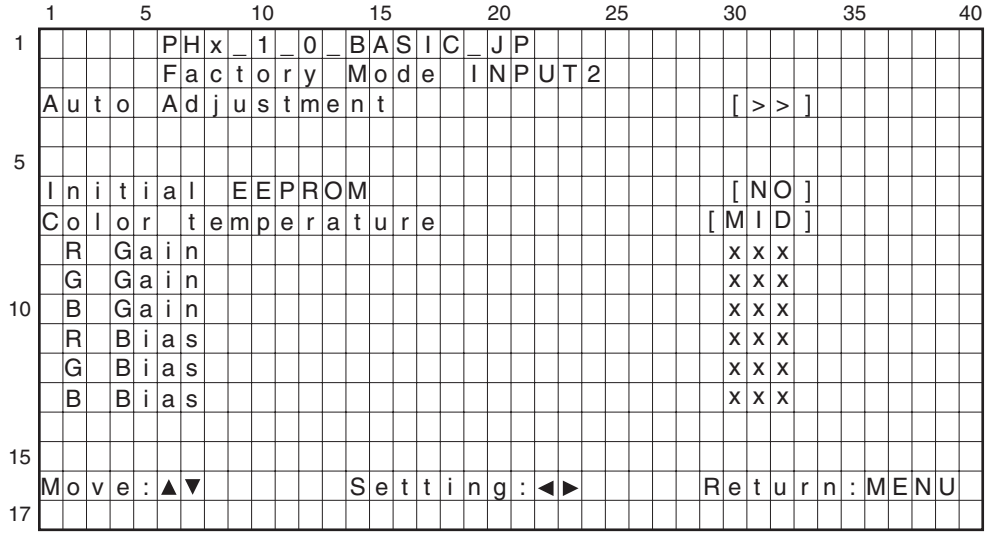


Fig. 4

2.4.2 Service Menu



6.2.4.3 Key command

Rem Code	Key Name	Key Pad	Function	Remarks
AA0E	INPUT 2	INPUT/SET	Choose the input to VGA input 2	For Japanese model
AA56	INPUT 3	INPUT/SET	Choose the input for DVI	For North america and general area models
AA8A	SET	MENU	Function Set	
AA8B	MENU	MENU	Open/Close the MENU	
AA96	▲	RIGHT+	Select the upper item	
AA95	►	VOL +	Execute the function	
AA94	◄	VOL-	Execute the function	
AA97	▼	RIGHT-	Select the lower item	
AA1C	STANDBY/ON		Power Off and Exit the Service factory Mode	

6.2.4.4 Timing mode and pattern for the auto white balance function

The auto white balance is not supported in this service factory mode

6.2.4.5 Description of Adjustment Item

Item	Description	Adjustment Range	Remarks
PHX_1_0_BASIC_JP	Current F/W Version	None	
Service factory Mode INPUT2	Service factory Mode with INPUT2	None	
Auto Adjustment	Execute the phase, clock and position adjustment automatically	Enable/Disable	For Japanese model only
Initial EEPROM	Execute the initial setting of EEPROM device	Yes/No	
Color Temperature	Change the color temperature setting value.	Low/Middle-Low/Middle /Middle-High/High	
R-GAIN	Gain value for Red Channel of ADC device	0~512	
G-GAIN	Gain value for Green Channel of ADC device	0~512	
B-GAIN	Gain value for Blue Channel of ADC device	0~512	
R-BIAS	Black level for Red Channel of ADC device	0~512	
G-BIAS	Black level for Green Channel of ADC device	0~512	
B-BIAS	Black level for Blue Channel of ADC device	0~512	

6.2.5 Service factory menu for gain and bias adjustment of component source in front device

This service factory mode is provided mainly to calibrate the gain and bias for three channels (R/G/B) in the front device when input source is component format, the calibration can be done by the automatic function (Auto White Balance) or manual to adjust each gain or bias value via R/G/B gain and Bias Items.

6.2.5.1 Basic Operation

- Connect the component source to input 5.
- Press the input 5 key on RUC or INPUT/SET (Ⓐ) key.
- Press the Menu key (Ⓑ) to open the Service factory Menu.
- Press the RIGHT+/RIGHT- key (Ⓒ) to select the adjustment item.
- Press the VOL+/VOL - (Ⓓ) to execute the adjustment.
- Press the Menu key (Ⓑ) to close the service factory mode. (See Fig. 5)

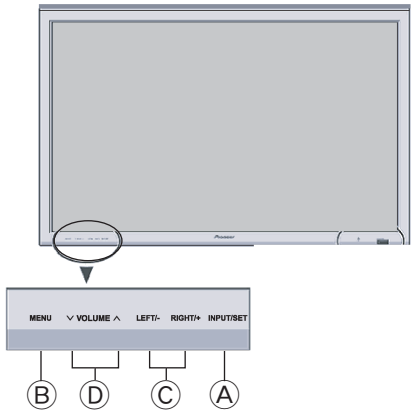


Fig. 5

6.2.5.2 Service Menu

```
    1    5    10   15   20   25   30   35
 1  PHX_1_0_BASIC_JP
    FaCtory Mode INPUT3

    Auto White Balance          [>>]
 5  ADC   IC                    [9833]
    Initial EEPROM              [NO]
    Color temperature           [MID]
      R Gain                    xxx
      G Gain                    xxx
10    B Gain                    xxx
      R Bias                    xxx
      G Bias                    xxx
      B Bias                    xxx

15
    Move:▲▼     Setting:◄►  Return:MENU
17
```

6.2.5.3 Key command

Rem Code	Key Name	Key Pad	Function	Remarks
AA56	INPUT 3	INPUT/SET	Choose the input to input Source 3	For basic model
AAD3+AF7B	INPUT 5	INPUT/SET	Choose the input to input Source 5	For custom model
AA8A	SET	MENU	Function Set	
AA8B	MENU	MENU	Open/Close the MENU	
AA96	▲	RIGHT+	Select the upper item	
AA95	►	VOL +	Execute the function	
AA94	◄	VOL-	Execute the function	
AA97	▼	RIGHT-	Select the lower item	
AA1C	STANDBY/ON		Power Off and Exit the Service factory Mode	

6.2.5.4 Timing mode and pattern for the auto white balance function

Timing Mode : 720 x483 @ 59.94 Hz (483p)
Test Pattern : SMPTE COLOR BAR

6.2.5.5 Description of Adjustment Item

Item	Description	Adjustment Range
PHX_1_0_BASIC_JP	Current F/W Version	
Service factory Mode INPUT3	Service factory Mode with INPUT3	
Auto White Balance	Execute the gains and biases adjustment for R/G/B three Channels in ADC device	Enable/Disable
Initial EEPROM	Execute the initial setting of EEPROM device	Yes/No
Color Temperature	Change the color temperature setting value.	Low/Middle-Low/Middle /Middle-High/High
R-GAIN	Gain value for Red Channel of ADC device	0~512
G-GAIN	Gain value for Green Channel of ADC device	0~512
B-GAIN	Gain value for Blue Channel of ADC device	0~512
R-BIAS	Black level for Red Channel of ADC device	0~512
G-BIAS	Black level for Green Channel of ADC device	0~512
B-BIAS	Black level for Blue Channel of ADC device	0~512

6.2.6 To leave service factory mode:

• AC power cord Pulled out.

6.2.7 RS-232 Command Set

Command Name	Range (***)	Remarks	Note	Japanese Model	North america/ General area Models
AISS00	••	Auto input switch: INACTIVE	Options Menu(1)	○	○
AISS01	••	Auto input switch: ACTIVE	Options Menu(1)	○	○
AMTS00	••	Turn on the audio mute	••	○	○
AMTS01	••	Turn off the audio mute	••	○	○
APOS00	••	Auto power: OFF	Options Menu(1)	○	○
APOS01	••	Auto power: INPUT1-2	Options Menu(1)	–	○
APOS02	••	Auto power: ALL	Options Menu(1)	○	○
ASMS00	••	Auto setup mode: INACTIVE	Options Menu(1)	○	○
ASMS01	••	Auto setup mode: ACTIVE	Options Menu(1)	○	○
AST	••	Executes AUTO SETUP	IR key: Auto Set up	○	○
AVSS01	••	Sets the AV selection to STANDARD	Picture Menu	○	○
AVSS02	••	Sets the AV selection to DYNAMIC	Picture Menu	○	○
AVSS03	••	Sets the AV selection to MOVIE	Picture Menu	○	○
AVSS07	••	Sets the AV selection to USER	Picture Menu	○	○
AUSS00	••	Set the Audio source to Main	Sound Menu	–	○
AUSS01	••	Set the Audio source to Sub	Sound Menu	–	○
BAL***	000~032	Adjusts the balance(-16 ~ 0 ~ +16)	Sound Memu	○	○
BAS***	000~012	Adjusts the bass(-6 ~ 0 ~ +6)	Sound Memu	○	○
BHI***	000~100	Adjusts the B High for color temp: User	Picture Menu	○	○
BLW***	000~100	Adjusts the B Low for color temp: User	Picture Menu	○	○
BRT***	000~100	Adjusts the brightness	Picture Menu	○	○
CFR***	000~100	Adjusts the clock	Screen Menu	○	○
CLSS01	••	Color system: AUTO	Options Menu(1)	○	○
CLSS02	••	Color system: NTSC	Options Menu(1)	○	○
CLSS03	••	Color system: PAL	Options Menu(1)	○	○
CLSS04	••	Color system: SECAM	Options Menu(1)	○	○
CLSS05	••	Color system: 443 NTSC	Options Menu(1)	○	○
CLSS06	••	Color system: PAL M	Options Menu(1)	○	○
CLSS07	••	Color system: PAL N	Options Menu(1)	○	○
CNT***	000~100	Adjusts the contrast	Picture Menu	○	○
COL***	000~100	Adjusts the color	Picture Menu	○	○
CPH***	000~100	Adjusts the phase	Screen Menu	○	○
CTPS01	••	Sets the color temp to LOW	Picture Menu	○	○
CTPS02	••	Sets the color temp to MID LOW	Picture Menu	○	○
CTPS03	••	Sets the color temp to MIDDLE	Picture Menu	○	○
CTPS04	••	Sets the color temp to MID HIGH	Picture Menu	○	○
CTPS05	••	Sets the color temp to HIGH	Picture Menu	○	○
CTPS06	••	Sets the color temp to USER	Picture Menu	○	○
DNRS00	••	DNR: OFF	Options Menu(1)	○	○
DNRS01	••	DNR: LOW	Options Menu(1)	○	○
DNRS02	••	DNR: MIDDLE	Options Menu(1)	○	○
DNRS03	••	DNR: HIGH	Options Menu(1)	○	○
ESVS00	••	Energy save: STANDARD	Options Menu(2)	○	○
ESVS01	••	Energy save: MODE1	Options Menu(2)	○	○

Command Name	Range (***)	Remarks	Note	Japanese Model	North america/ General area Models
ESVS02	••	Energy save: MODE2	Options Menu(2)	○	○
ESVS03	••	Energy save: MODE3	Options Menu(2)	○	○
FCLS00	••	Key lock: OFF	Options Menu(1)	○	○
FCLS01	••	Key lock: ON	Options Menu(1)	○	○
FDT	••	Function default	Options Menu(2)	○	○
FMKS00	••	Screen mask: OFF	Options Menu(2)	○	○
FMKS02	••	Screen mask: INVERSE	Options Menu(2)	○	○
FMKS03	••	Screen mask: WHITE	Options Menu(2)	○	○
GHI***	000~100	Adjusts the G High for color temp: User	Picture Menu	○	○
GLW***	000~100	Adjusts the G Low for color temp: User	Picture Menu	○	○
GO1	••	Get option 1 data	GET command	○	○
GO2	••	Get option 2 data	GET command	○	○
GPI	••	Get picture data	GET command	○	○
GRAS01	••	Sets the Gamma to 1.8	Picture Menu	○	○
GRAS02	••	Sets the Gamma to 2.0	Picture Menu	○	○
GRAS03	••	Sets the Gamma to 2.2	Picture Menu	○	○
GSC	••	Get screen data	GET command	○	○
GSO	••	Get sound data	GET command	○	○
HPS***	••	Adjusts the horizontal position	Screen Menu	○	○
HSI***	••	Adjusts the horizontal size	Screen Menu	○	○
IDC	••	Clear the ID:**(set to 0x00, t.b.f)	••	○	○
IDSS**	00~FF	Set the ID:** (00~FF)	Options Menu(1)	○	○
INPS01	••	Switches the main screen to INPUT1	IR key: input1	○	○
INPS02	••	Switches the main screen to INPUT2	IR key: input2	○	○
INPS03	••	Switches the main screen to INPUT3	IR key: input3	○	○
INPS04	••	Switches the main screen to INPUT4	IR key: input 4	-	○
INPS05	••	Switches the main screen to INPUT5	IR key: input 5	-	○
LGES01	••	Language: English	Options Menu(2)	○	○
LGES02	••	Language: French	Options Menu(2)	○	○
LGES03	••	Language: Espanol	Options Menu(2)	○	○
LGES04	••	Language: Dentsch	Options Menu(2)	○	○
LGES05	••	Language: Italian	Options Menu(2)	○	○
LGES06	••	Language: Japan	Options Menu(2)	○	○
LGES07	••	Language: Traditional Chinese	Options Menu(2)	○	○
MCDS01	••	Color decoding: RGB	Options Menu(1)	○	○
MCDS02	••	Color decoding: COMPONENT1	Options Menu(1)	○	○
MCDS03	••	Color decoding: COMPONENT2	Options Menu(1)	○	○
MCTS00	••	Mask control: OFF	Options Menu(2)	○	○
MCTS01	••	Mask control: ON	Options Menu(2)	○	○
ORBS00	••	Orbiter: OFF	Options Menu(2)	○	○
ORBS01	••	Orbiter: NORMAL	Options Menu(2)	○	○
ORBS02	••	Orbiter: FAST	Options Menu(2)	○	○
OSDS00	••	OSD display is forbidden	••	○	○
OSDS01	••	Permit the OSD display	••	○	○

Command Name	Range (***)	Remarks	Note	Japanese Model	North america/ General area Models
PCN	••	Pure Cinema: OFF	Options Menu(2)	○	○
PCY	••	Pure Cinema: ON	Options Menu(2)	○	○
POF	••	Power off	••	○	○
PON	••	Power on	••	○	○
RHI***	000~100	Adjusts the R High for color temp: User	Picture Menu	○	○
RLW***	000~100	Adjusts the R Low for color temp: User	Picture Menu	○	○
SFTS01	••	Signal format: AUTO	Options Menu(1)	○	○
SFTS02	••	Signal format: WIDE1	Options Menu(1)	○	○
SFTS03	••	Signal format: WIDE2	Options Menu(1)	○	○
SFTS04	••	Signal format: WIDE3	Options Menu(1)	○	○
SHP***	000~015	Adjusts the sharpness	Picture Menu	○	○
SMLS00	••	Side mask level: 0	Options Menu(2)	○	○
SMLS01	••	Side mask level: 1	Options Menu(2)	○	○
SMLS02	••	Side mask level: 2	Options Menu(2)	○	○
SMLS03	••	Side mask level: 3	Options Menu(2)	○	○
SMLS04	••	Side mask level: 4	Options Menu(2)	○	○
SOFS00	••	Soft focus: OFF	Options Menu(2)	○	○
SOFS01	••	Soft focus: 1	Options Menu(2)	○	○
SOFS02	••	Soft focus: 2	Options Menu(2)	○	○
SOFS03	••	Soft focus: 3	Options Menu(2)	○	○
SOFS04	••	Soft focus: 4	Options Menu(2)	○	○
SZMS00	••	Sets the screen size to Dot by Dot	••	○	○
SZMS01	••	Sets the screen size to 4:3	••	○	○
SZMS02	••	Sets the screen size to FULL	••	○	○
SZMS03	••	Sets the screen size to ZOOM	••	○	○
SZMS05	••	Sets the screen size to WIDE	••	○	○
SZMS10	••	Sets the screen size to 2.35:1	••	○	○
TNT***	000~100	Adjusts the tint	Picture Menu	○	○
TRE***	000~012	Adjusts the treble(-6 ~ 0 ~ +6)	Sound Menu	○	○
VISS01	••	Video input select: COMPONENT	Options Menu(1)	○	○
VISS02	••	Video input select: Y/C	Options Menu(1)	○	○
VISS03	••	Video input select: COMPOSITE	Options Menu(1)	○	○
VOL***	000~050	Adjusts the audio volume	••	○	○
VPS***	••	Adjusts the vertical position	Screen Menu	○	○
VSI***	••	Adjusts the vertical size	Screen Menu	○	○
WBR	••	White Balance Reset	Picture Menu	○	○

○ : Available , – : Not Available

6.2.8 Supported timing mode for S-Video and Composite inputs

SIGNAL	V-Freq. (Hz)	H-Freq. (KHz)
PAL_M	60/1.001	15.75
PAL_N	50	15.63
PAL (B / G / D / K)	50	15.63
NTSC (3.58 / 4.43)	60/1.001	15.75
SECAM	50	15.63

6.2.9 Supported timing mode for component input

SIGNAL	V-Freq. (Hz)	H-Freq. (kHz)	Dot Clock (MHz)	H-Sync P l it	V-Sync P l it
720 x 480 @ 59.94	60/1.001	31.5	27	Bi_Level	Bi_level
720 x 480 @ 59.94	60/1.001	15.73	13.5	Bi_Level	Bi_level
720 x 576 @ 50	50	31.5	27	Bi_Level	Bi_level
720 x 576 @ 50	50	15.63	13.5	Bi_Level	Bi_level
1280 x 720 @ 59.94	60/1.001	44.95	74.25/1.001	Tri_level	Tri_level
1280 x 720 @ 60	60	45	74.25	Tri_level	Tri_level
1280 x 720 @ 50	50	37.5	74.25	Tri_level	Tri_level
1920 x 1080 @ 59.94	60/1.001	33.72	74.25/1.001	Tri_level	Tri_level
1920 x 1080 @ 60	60	33.75	74.25	Tri_level	Tri_level
1920 x 1080 @ 50	50	28.13	74.25	Tri_level	Tri_level

6.2.10 Supported timing mode for VGA and DVI input

SIGNAL	V-Freq. (Hz)	H-Freq. (kHz)	Dot Clock (MHz)	H-Sync Polarity	V-Sync Polarity	RGB Select	DVI	Standard
640 x 400 PC98	70.1	31.5	25.2	NEGA	NEGA	N/A	–	PC98 (PC by NEC)
640 x 480 VGA	59.9	31.5	25.2	NEGA	NEGA	N/A	○	VESA standard
	72.8	37.9	31.5	NEGA	NEGA	N/A	○	VESA standard
	75.0	37.5	31.5	NEGA	NEGA	N/A	○	VESA standard
	85.0	43.3	36.0	NEGA	NEGA	N/A	○	VESA standard
848 x 480 WVGA	60.0	31.0	33.8	POSI	POSI	N/A	○	VESA standard
852 x 480 WVGA	60.0	31.7	34.0	NEGA	NEGA	N/A	○	I/O DATA
800 x 600 SVGA	56.3	35.2	36.0	POSI	POSI	N/A	○	VESA standard
	60.3	37.9	40.0	POSI	POSI	N/A	○	VESA standard
	72.2	48.1	50.0	POSI	POSI	N/A	○	VESA standard
	75.0	46.9	49.5	POSI	POSI	N/A	○	VESA standard
	85.1	53.7	56.3	POSI	POSI	N/A	○	VESA standard
1024 x 768 XGA	60.0	48.4	65.0	NEGA	NEGA	N/A	○	VESA standard
	70.1	56.5	75.0	NEGA	NEGA	N/A	○	VESA standard
	75.0	60.0	78.8	POSI	POSI	N/A	○	VESA standard
	85.0	68.7	94.5	POSI	POSI	N/A	○	VESA standard
1280 x 768 WXGA	56.3	45.1	76.2	NEGA	NEGA	N/A	–	PIONEER original
	59.9	47.8	79.5	NEGA	POSI	wide2	○	CVT
	69.8	56.0	95.0	NEGA	POSI	N/A	○	CVT
1280 x 800	59.8	49.7	83.5	NEGA	NEGA	N/A	○	CVT

SIGNAL	V-Freq. (Hz)	H-Freq. (kHz)	Dot Clock (MHz)	H-Sync Polarity	V-Sync Polarity	RGB Select	DVI	Standard
1280 x 854	59.9	53.1	89.3	NEGA	NEGA	N/A	○	PC
1152 x 864	75.0	67.5	108.0	POSI	POSI	N/A	○	VESA standard
1280 x 1024 SXGA	60.0	64.0	108.0	POSI	POSI	N/A	○	VESA standard
	75.0	80.0	135.0	POSI	POSI	N/A	○	VESA standard
	85.0	91.1	157.5	POSI	POSI	N/A	○	VESA standard
1360 x 768 WXGA	60.0	47.7	85.5	POSI	POSI	wide1	○	I/O DATA
1376 x 768 WXGA	59.9	48.3	87.3	NEGA	POSI	N/A	○	I/O DATA
1600 x 1200 UXGA	60.0	75.0	162.0	POSI	POSI	N/A	○	VESA standard
	65.0	81.3	175.5	POSI	POSI	N/A	–	VESA standard
	70.0	87.5	189.0	POSI	POSI	N/A	–	VESA standard
	75.0	93.8	202.5	POSI	POSI	N/A	–	VESA standard
	85.0	106.3	229.5	POSI	POSI	N/A	–	VESA standard
1680 x 1050	60.0	65.3	146.3	NEGA	NEGA	N/A	–	CVT
1920 x 1200	59.9	74.6	193.3	NEGA	NEGA	N/A	–	CVT
1920 x 1200RB	60.0	74.0	154.0	NEGA	NEGA	N/A	○	CVT
640 x 480 Mac'13	66.7	35.0	30.2	Sync on G	Sync on G	N/A	–	Mac'13 (sync on G)
832 x 624 Mac'16	74.5	49.7	57.3	Sync on G	Sync on G	N/A	–	Mac'16 (sync on G)
1024 x 768 Mac'19	74.9	60.2	80.0	Sync on G	Sync on G	N/A	–	Mac'19 (sync on G)
1152 x 870 Mac'21	75.1	68.7	100.0	Sync on G	Sync on G	N/A	–	Mac'21 (sync on G)
1440 x 900	59.9	55.9	106.5	NEGA	NEGA	N/A	○	Apple17
1280 x 1024 EWS4800*1	60.0	64.6	*1	NEGA	NEGA	N/A	○	EWS Work Station
1280 x 1024 EWS4800	71.2	75.1	125.0	NEGA	NEGA	N/A	○	EWS Work Station
1280 x 1024 HP	72.0	78.1	135.0	POSI	POSI	N/A	○	HP Work Station
1152 x 900 SUN	66.0	61.8	92.9	C sync	C sync	N/A	○	SUN, (C sync)
	76.0	71.7	105.6	C sync	C sync	N/A	○	SUN, (C sync)
1280 x 1024 SUN *2	76.1	81.1	*2	C sync	C sync	N/A	○	SUN, (C sync)
1024 x 768 SGI	60.0	49.7	70.0	NEGA	NEGA	N/A	○	SGI Work Station
1280 x 1024 SGI*1	60.0	63.9	*1	NEGA	NEGA	N/A	○	SGI Work Station
1400 x 1050@60 SXGA+	59.978	65.3	121.75	NEGA	POSI	N/A	○	CVT
1400 x 1050@75 SXGA+	74.867	82.3	156	NEGA	POSI	N/A	○	CVT
1400 x 1050@85 SXGA+	84.960	93.9	179.5	NEGA	POSI	N/A	○	CVT
720 x 480 @ 59.94	60/1.001	31.5	27	Bi_Level	Bi_level	N/A	○	
720 x 480 @ 59.94	60/1.001	15.73	13.5	Bi_Level	Bi_level	N/A	–	
720 x 576 @ 50	50	31.5	27	Bi_Level	Bi_level	N/A	○	
720 x 576 @ 50	50	15.63	13.5	Bi_Level	Bi_level	N/A	–	
1280 x 720 @59.94	60/1.001	44.95	74.25/1.001	Tri_level	Tri_level	N/A	○	
1280 x 720 @60	60	45	74.25	Tri_level	Tri_level	N/A	○	
1280 x 720 @50	50	37.5	74.25	Tri_level	Tri_level	N/A	○	
1920 x 1080 @ 59.94	60/1.001	33.72	74.25/1.001	Tri_level	Tri_level	N/A	○	
1920 x 1080 @ 60	60	33.75	74.25	Tri_level	Tri_level	N/A	○	
1920 x 1080 @ 50	50	28.13	74.25	Tri_level	Tri_level	N/A	○	

○ : Available , – : Not Available

6.3 ADJUSTMENT OF THE POWER SUPPLY UNIT

A. Adjustment of the power supply unit(using a scredriver for general-purpose adjustments)

1. Adjustment of the Vs voltage

(1) Enter a color bar input by means of either video signal of Video Input, or composite signal input, or RGB signal input, and turn on the power switch.

(2) Turn the volume control(*VR151) in the power supply unit and make adjustements until the voltages of *TP(Vs) and *TP(GND) of the power supply unit attain the voltage values specified for the PDP(Vs value of the voltage regulation indicator label on below the figure) plus minus 1V.

2. Adjustment of the Vd voltage

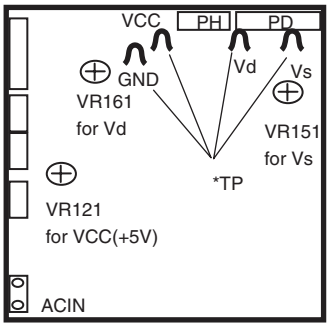
(1) Enter a color bar input by means of either video signal of Video Input, or composite signal input, or RGB signal input, and turn on the power switch.

(2) Turn the volume control(*VR161) in the power supply unit and make adjustements until the voltages of *TP(Vd) and *TP(GND) of the power supply unit attain the voltage values specified for the PDP(Vd value of the voltage regulation indicator label on below the figure) plus minus 1V.

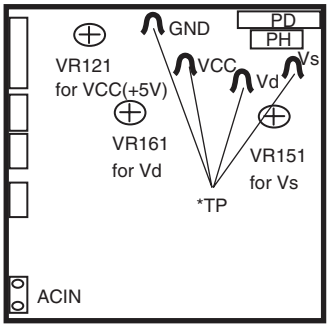
3. Adjustment of the +5V voltage

(1) Display a color bar by means of either video signal of Video Input, or composite signal input, or RGB signal

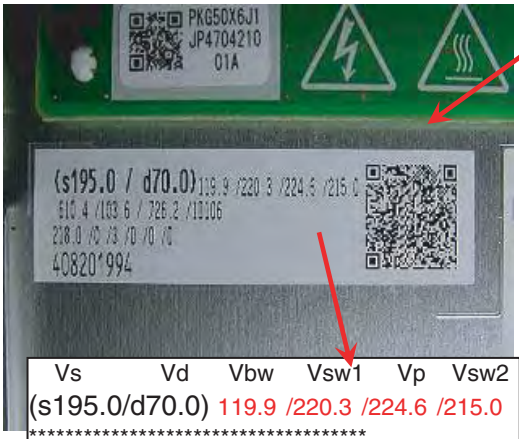
(2) Confirm that the voltages of *TP(VCC) and *TP(GND) of the power supply supply unit are maintained at "5.15 plus minus 0.1V". Otherwise, turn the volume control (*VR121) until the voltage attains "5.15 plus minus 0.1V".



Top view of power supply unit for 40inch.

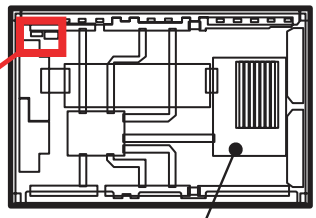


Top view of power supply unit for 50inch.



Vs	Vd	Vbw	Vsw1	Vp	Vsw2
(s195.0/d70.0)	119.9	/220.3	/224.6	/215.0	
**********					
408201994					

Adjustment voltage label.



High voltage PKG

Rear side view when the back cover is removed.
The label position can be changed, without notice.

B. Adjustment of the High voltage PKG.

(1) Adjust each voltage of Vsw1 and Vsw2 and Vbw and Vp in the High voltage PKG board when exchanged High voltage PKG.

(2) When PKG other than above-mentioned (1) are exchanged, the adjustment is unnecessary.

(Caution)
Confirm the adjustment voltage value with the adjustment voltage label.

C. Adjusting conditions

Adjustments should be carried out in the procedures (1) to (3) specified below. However, any adjustments other than the items (1) to (3) below are not required.

(1) When the "PDP module" is replaced, adjustments should conform to the adjusting item of {A and B} specified above.

(2) When the "Power Unit" is replaced, adjustments should conform to the adjusting item of {A} specified above.

(3) When the "High Voltage PKG" is replaced, adjustments should conform to the adjusting item of {B} specified above.

D. M/B Assy (DVI) : 21PH3MB0059

When Main Board Assy is exchanged, any adjustments are not required.

7. GENERAL INFORMATION
7.1 SHUTDOWN

Shutdown (SD)

(State of LED on front panel)	Reason of shutdown	Detection signal	To exit shutdown (S/D) again after Power Supply detected shutdown (in order to reactivate by the power ON)
Red LED blinking	Abnormal of internal temperature. Abnormal of panel.	_Temperature sensor. _Alarm signal from PDP module to CPU(U10). _LVP signal (LVDS power on) from power supply unit to PDP module I/F.	Turn off the Main power supply SW, and power supply ON is possible again. It shutdown again if there is same symptom.
Green LED blinking	Abnormality of FAN Motor	LOCK signal of FAN Motor. (Failure in the fan motor)	Same as the description above.

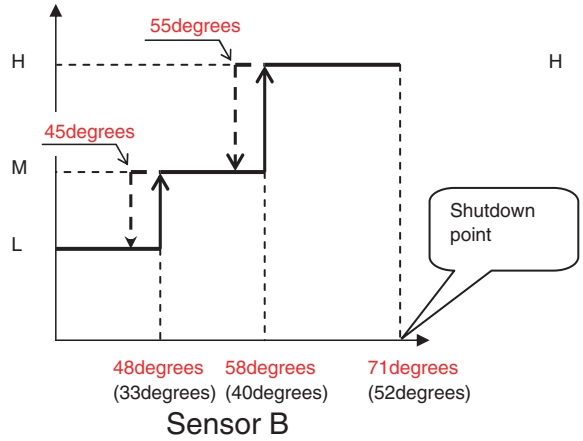
(for reference)

Red LED on front panel lighting	No input signal. (When Auto Power SW control is effective)	Sync (Separates signal , Composites signal, All input signals)	Reactivate the PDP system by inputting signal of the STANDBY/ON key or the remote control unit P-ON.

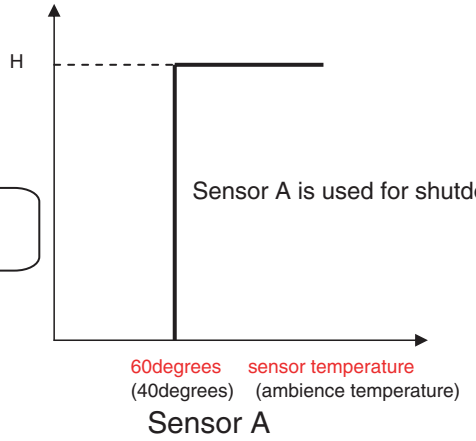
7.2 SPECIFICATIONS ON TEMPERATURE SENSOR DETECTION AND DRIVING OF THE FAN

• Method of FAN motor control

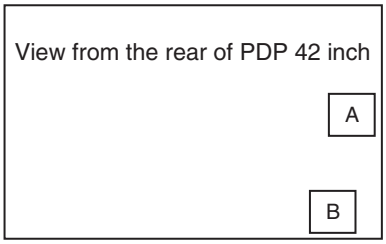
(42 inch)



Sensor B

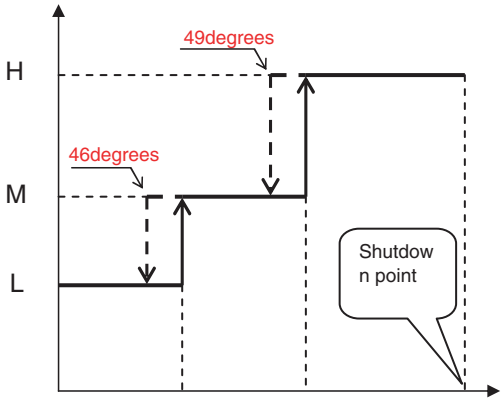


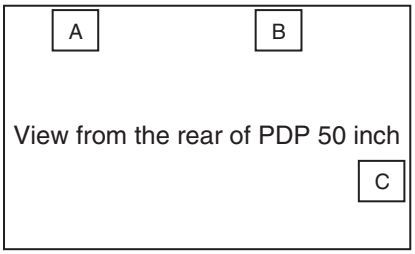
Sensor A



(50 inch)

C-A = 5degrees (Fan motor speeds change to high)





A or B or C sensor

7.3 TROUBLE SHOOTING

• Counter measures

The improved point with running change(MP electricity problem)

No.	items	Symptoms	Cause	Provisional measure	Serial NO. for Provisional measure	Permanent measures	Permanent measures beginning lot
1	The audio output is abnormal.	_The noise such as the hams occurs. _The sound is not emitted.	The Control voltage margin was insufficient of audio selector IC.	The voltage of the microcomputer is improved. Changed the resistor JP model:R50 200 Ω (1%)→ 210 Ω (1%) : US & GA model: R468 11K (1%) → 10K (1%)	JP 42inch: EITY002266JP JP 50inch: EITY002872JP US 42inch: EITY002256UC US 50inch: EITY002566UC GA 42inch: EITY002866EH GA 50inch: EITY002870EH	The level shift circuit is added to the control line from the microcomputer and the control voltage is improved. (Board Assy modification). three of Transistor and nine of resistance additions.	synchronized to the mentioned board assy modifications.
2	The screen becomes like white.	_It seems that brightness goes up when the video signal of specific VTR is input.	This case is generated by Y level of the Sync level AGC.	VTR is limited as spec.	---	The firmware is improved, and the AGC function is deleted. JP model : Ver1.5 US&GA : Ver1.6	---
3	Service mode problem	The User MENU is initialized when the service mode entered .	Specification change		---	The firmware is changed, and service MENU is added. JP model : ver1.3 US&GA : ver1.3	OK since this serial NO. JP 42inch: EITY002766JP JP 50inch: EITY002872JP US 42inch: EITY002868UC US 50inch: EITY003774UC GA 42inch: EITY002866EH GA 50inch: EITY002870EH

8. DISASSEMBLY

1 Back cover

• Rear Case section

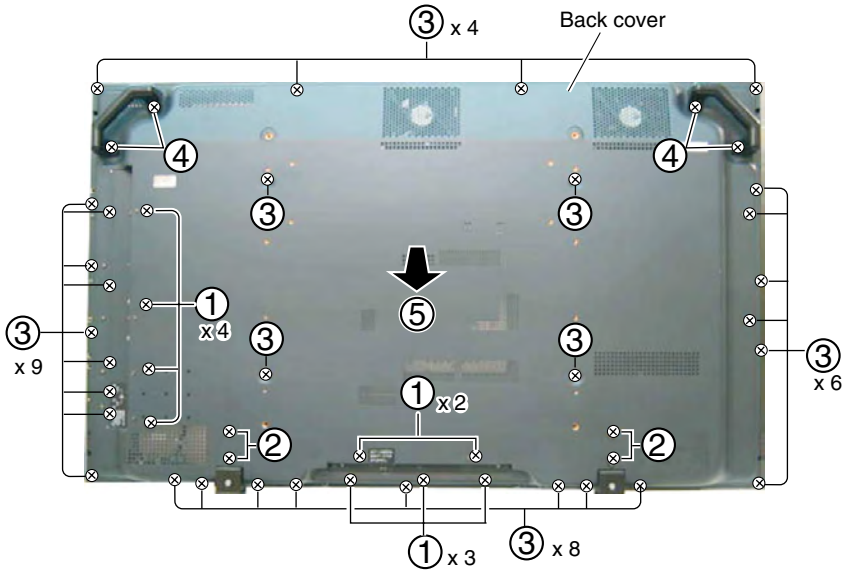
① Remove the 9 screws. x 9

② Remove the Stand, 4 screws. x 4

③ Remove the 31 screws. x 31

④ Remove the 4 screws.

⑤ Remove the Back Cover.



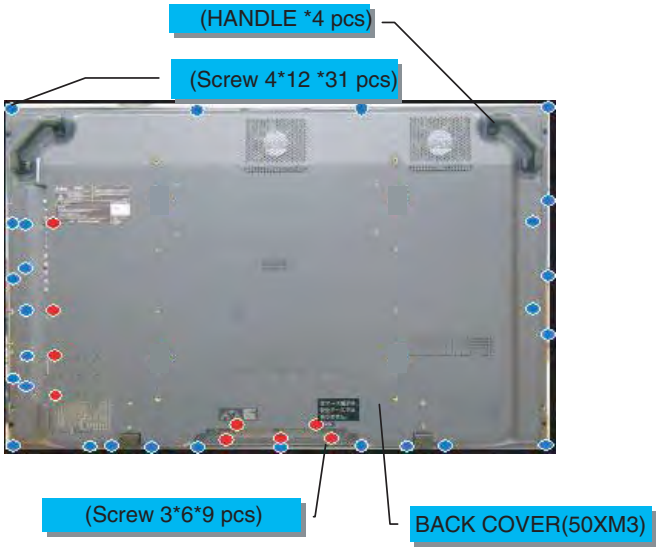
2 Front Panel Assy

• The following are order to remove a Bezel part.

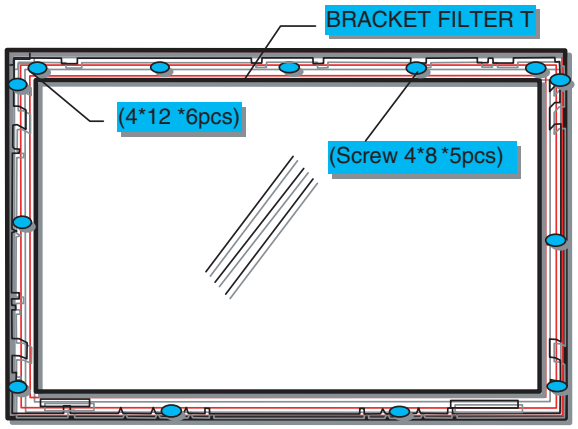
＊The screen of a set puts downward. (Remove the Stand.)

1. Remove the Back Cover.
2. Remove the Frame Assy.
3. Remove the PDP module Assy.
4. Remove the BRACKET FILTER T .
5. Remove the Front panel including a glass filter.
6. Remove the bezel part is completed.

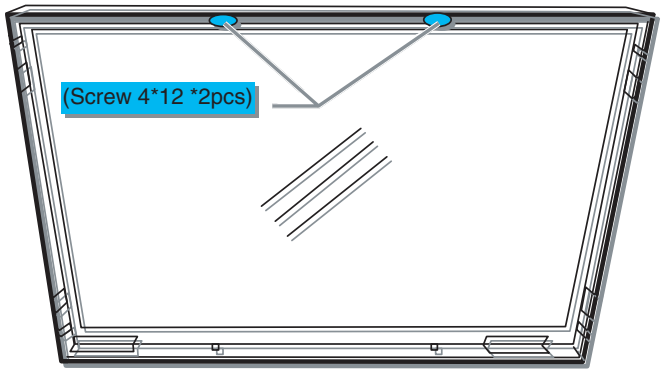
① Remove the rear panel cover (Back Cover).



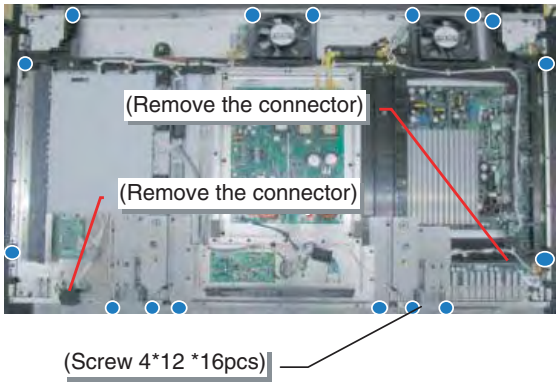
④ Remove below pointed screws. After that, remove "BRACKET FILTER T".



⑤ Remove 2 screws for holding FRONT PANEL. After that, remove the Bezel part.

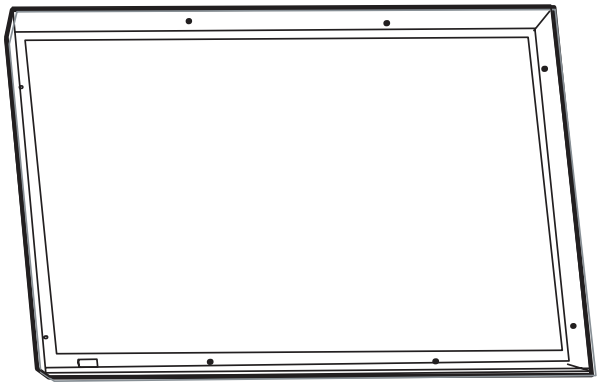


②③ Remove the Frame Assy and the PDP module



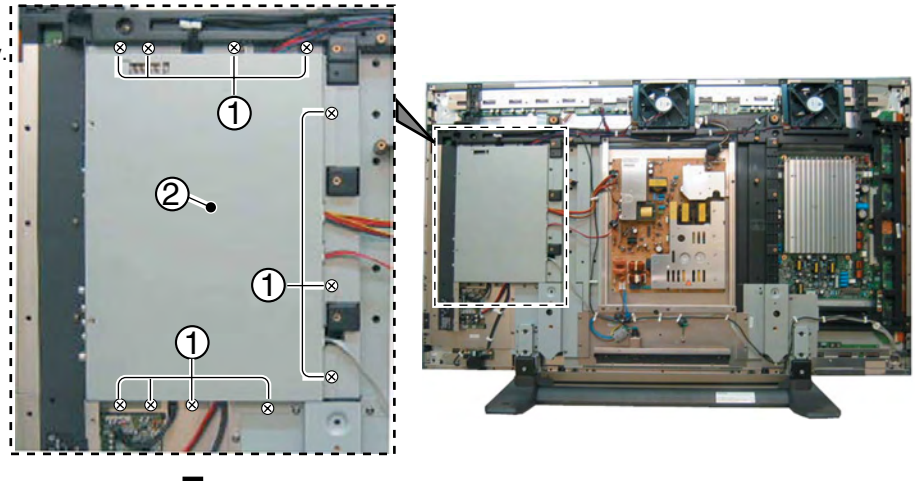
Remove above pointed screw, 16 pcs, and 2 connectors. After that, separate Frame Assy and Front Assy.

The Bezel part

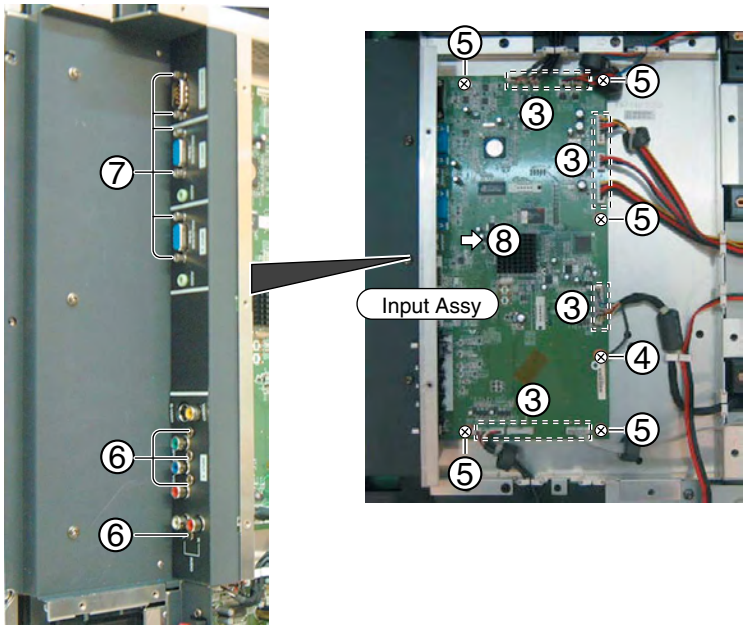


3 Input Block

① Remove the 11 screws.
② Remove the Shield cover main Assy.

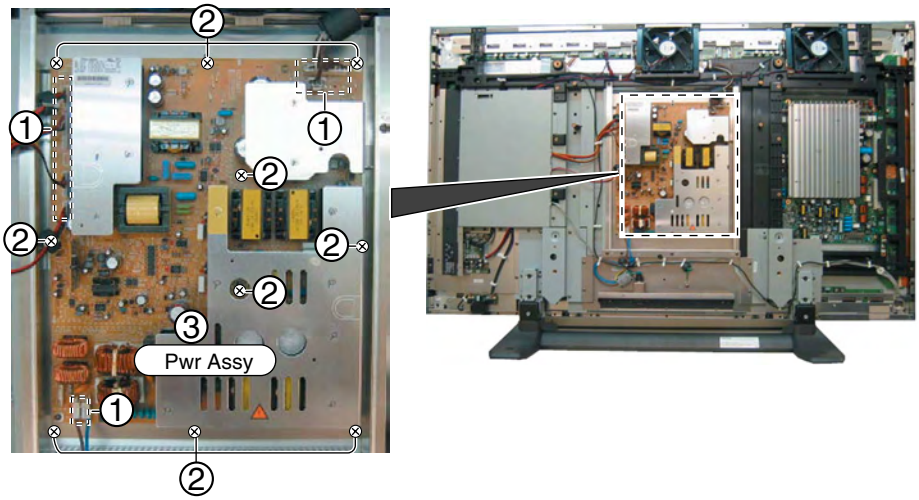


③ Disconnect the 4 connectors.
④ Remove the screw and GND terminal.
⑤ Remove the 5 screws.
⑥ Remove the 4 screws.
⑦ Remove the 6 Hexagon head screws.
⑧ Remove the M/B Assy.



4 Power Block

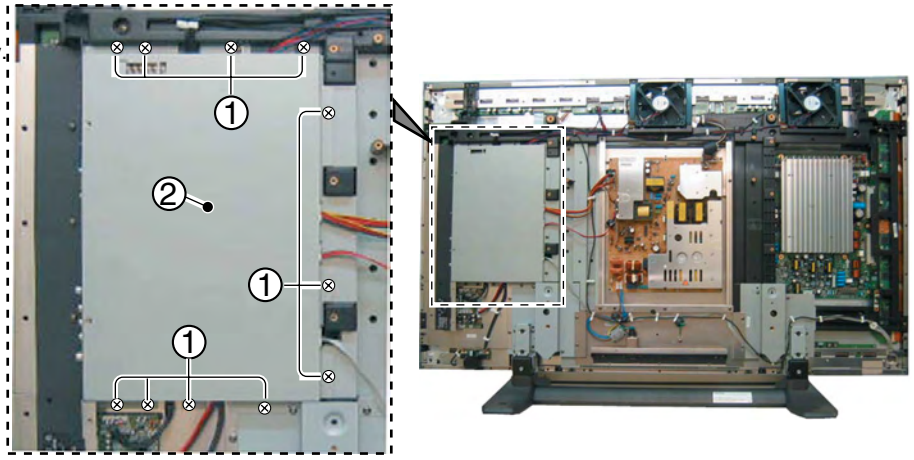
① Disconnect the 8 connectors.
② Remove the 10 screws.
③ Remove the Pwr Assy.



5 Sub flme Assy Block

① Remove the 11 screws.

② Remove the Shield cover main Assy.



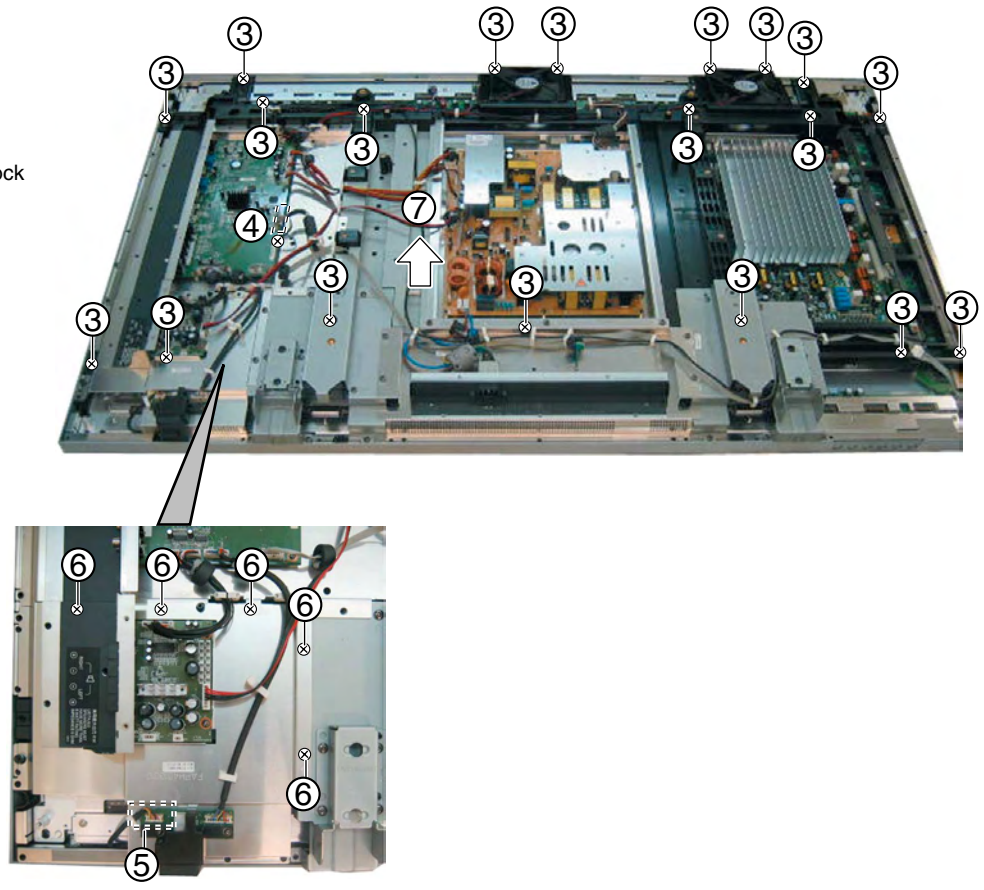
③ Remove the 19 screws.

④ Remove the screw and GND terminal.

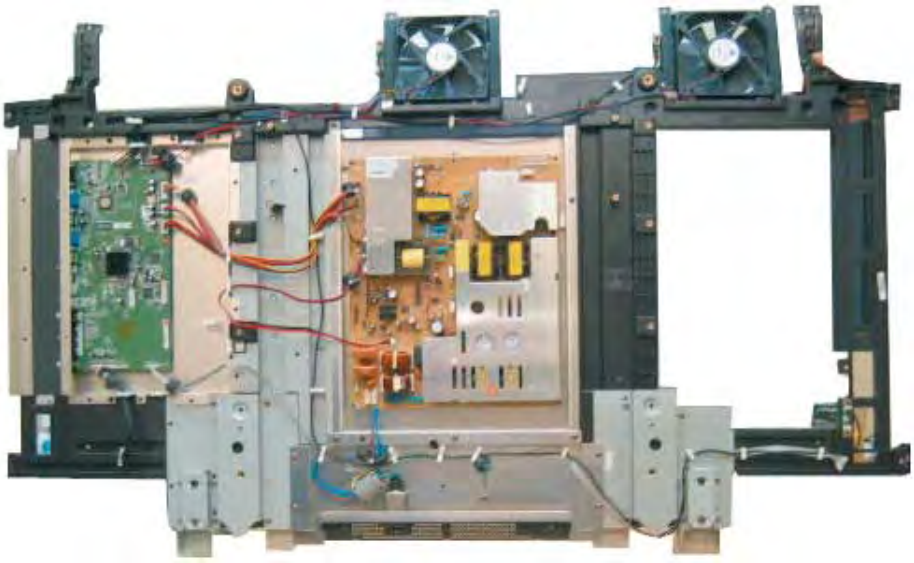
⑤ Disconnect the connectors.

⑥ Remove the 5 screws.

⑦ Remove the sub flame Assy Block



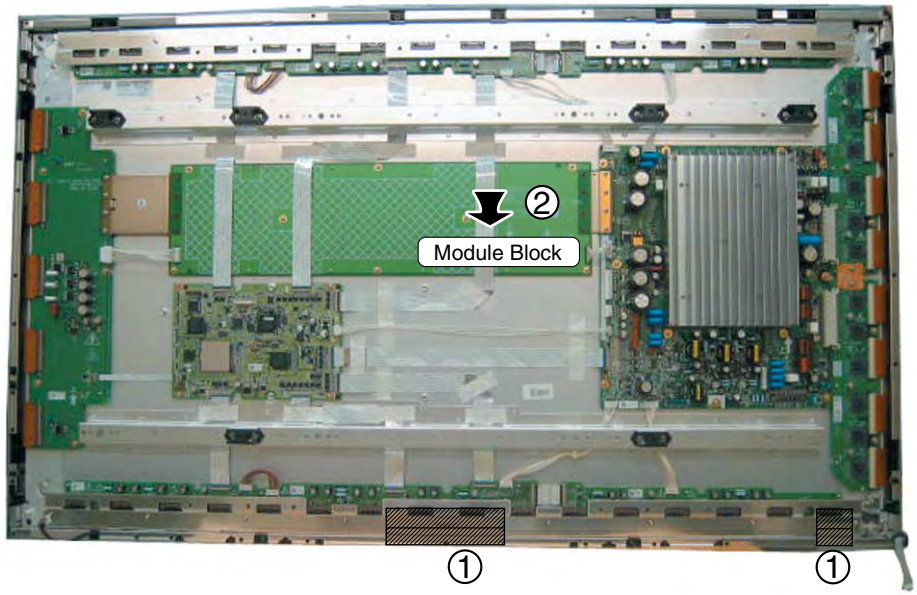
• **Sub fIme Assy Block**



• **Panel module Block**

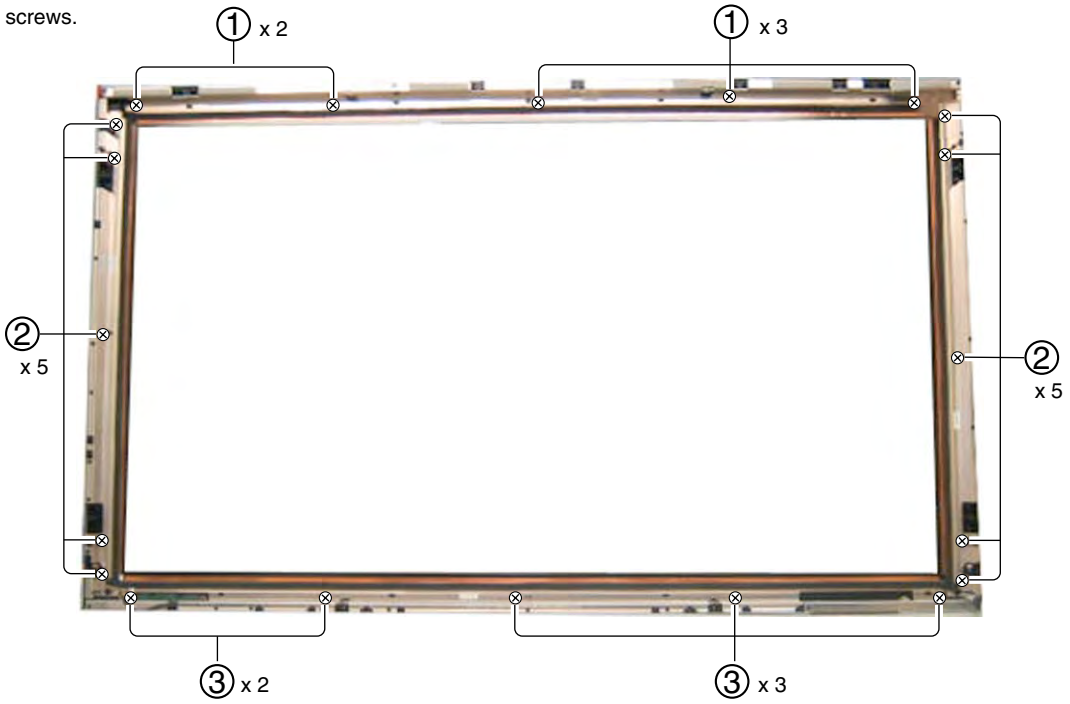
① Remove the Gasket

② Remove the module Block



6 Front Case Assy Block

① Remove the 5 screws.
② Remove the 10 screws.
③ Remove the 5 screws.

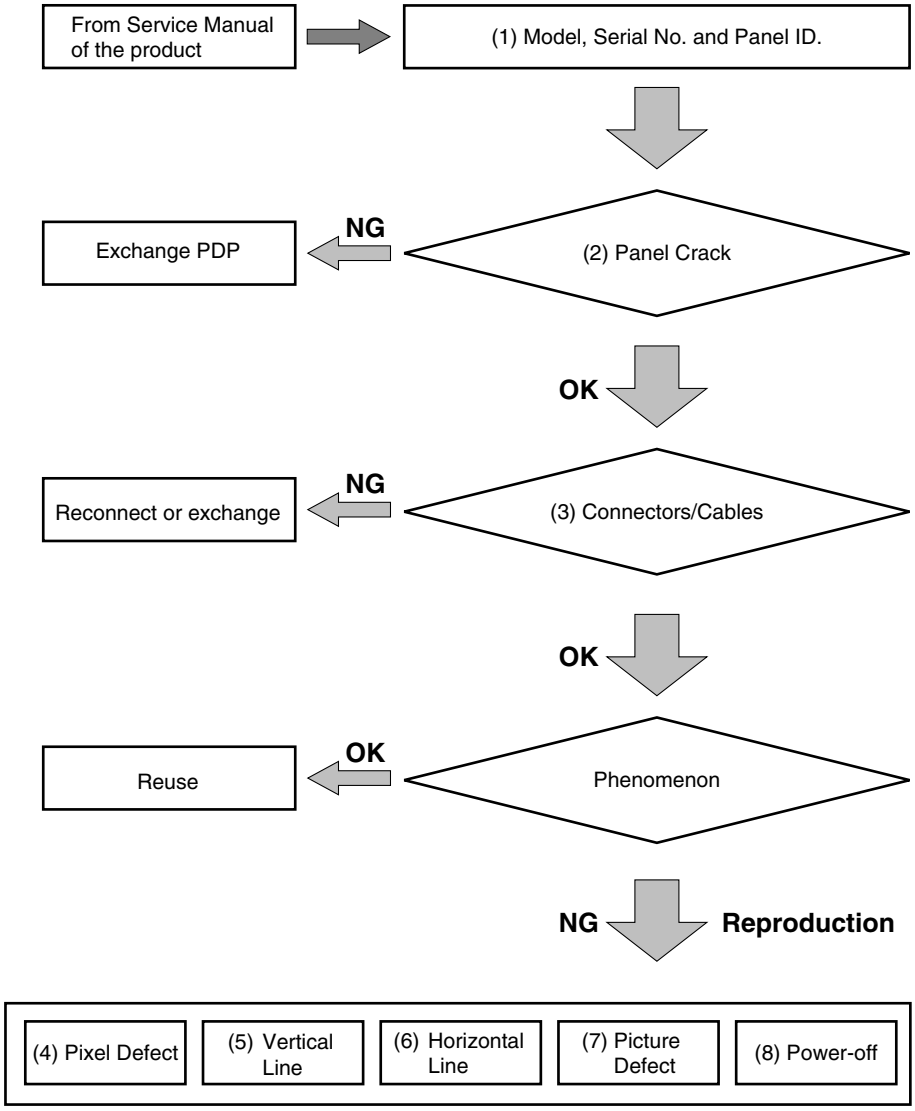


9. DIAGNOSIS OF THE PDP MODULE

1. TROUBLE SHOOTING

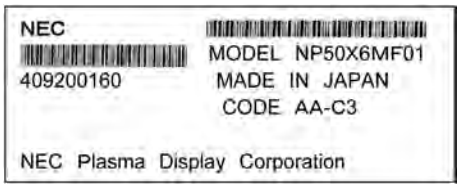
Follow the procedure below for failure diagnosis. Keep wearing Antistatic List Band until you finish the work.

Procedure on After-sale Service

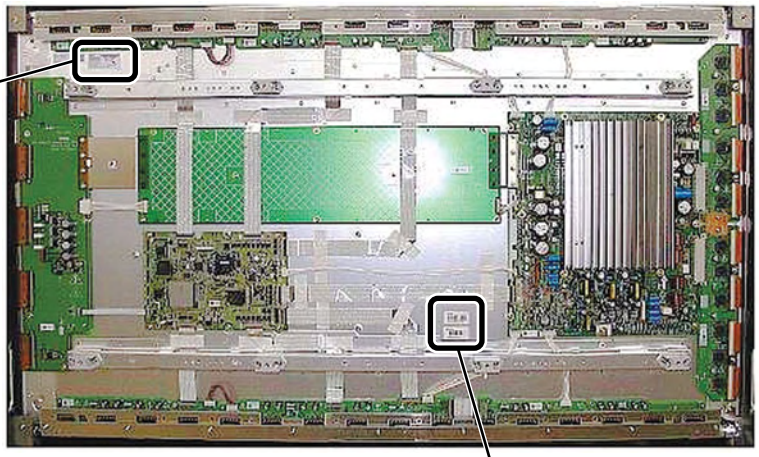


(1) Model, Serial No., and Panel ID

Refer to the photographs below to find Model, Serial No. and Panel ID.



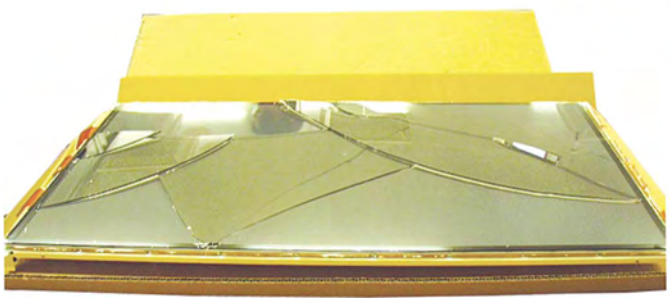
Above Example
Model: NP50X6MF01AA
Serial No.: 409200160



222408264372

(2) Panel Crack

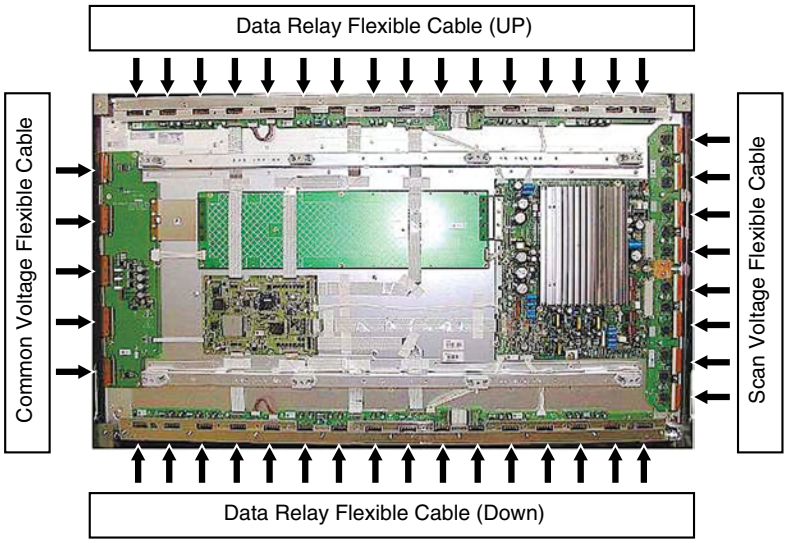
Refer to the photographs below to check panel for crack.

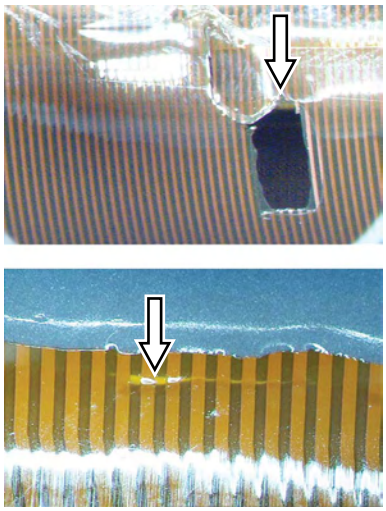


Panel may be cracked due to handling during or after transportation.

(3) Connectors/Cables

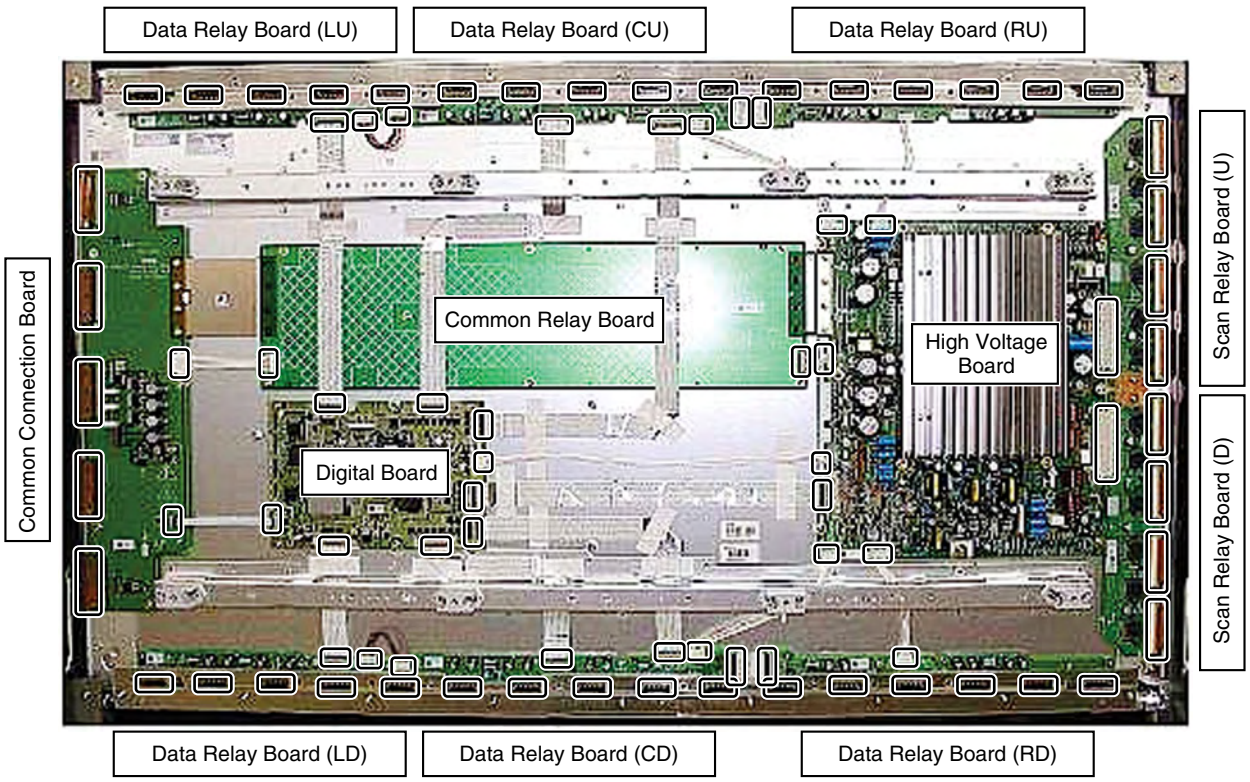
(3-1) Check connectors and cables for breakage or disconnection referring to the photos below.


Data Relay Flexible Cable (UP)
Common Voltage Flexible Cable
Scan Voltage Flexible Cable
Data Relay Flexible Cable (Down)

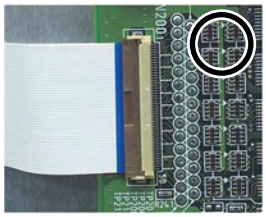
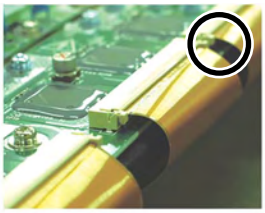
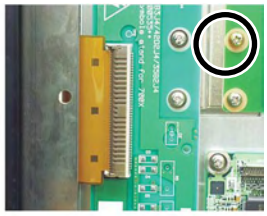
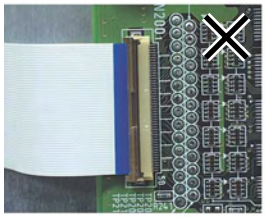
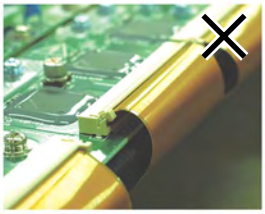
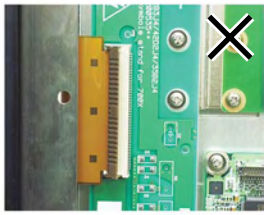


Caution: Take care for the cable handling. Careless handling in production line may cause this failure.

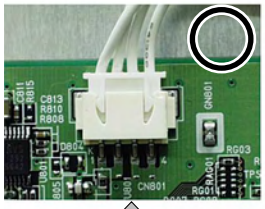
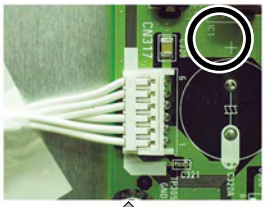
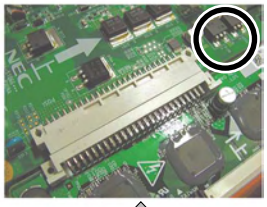
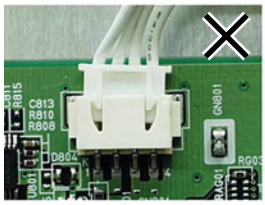
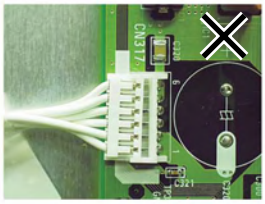
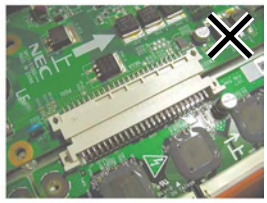
(3-2) Check connectors and cables whether they are connected and locked right.
See the following right procedure of connection.



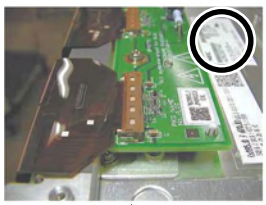
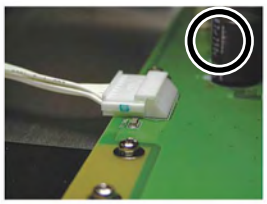
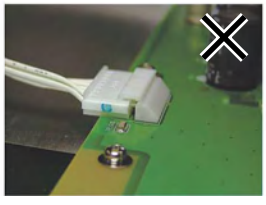
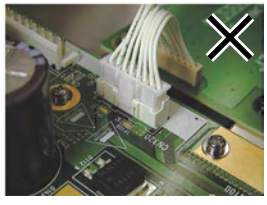
Right Connection (Part 1)

	High voltage Board (Photo) ↔ Digital Board	Scan Relay Board (Photo) ↔ Panel	Common Relay Board (Photo) ↔ Panel
Locked			
Unlocked			

Right Connection (Part 2)

	Digital Board (Photo) ↔ High Voltage Board	High Voltage Board (Photo) ↔ Data Relay Board	High Voltage Board (Photo) ↔ Scan Relay Board (Photo)
Locked			
Unlocked			

Right Connection (Part 3)

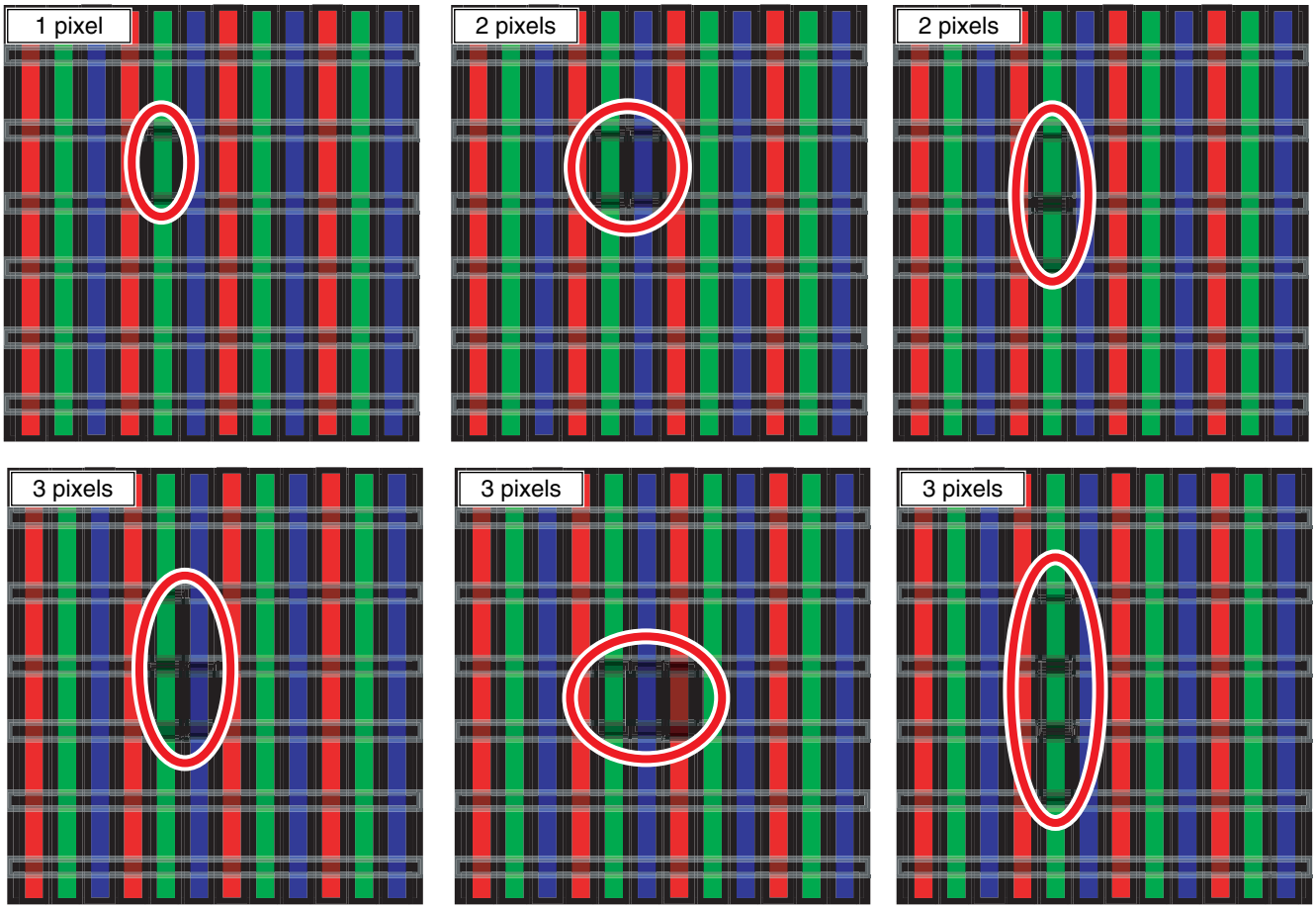
	Data Relay Board (Photo) ↔ Panel	Common Connection Board (Photo) ↔ Common Relay Board	High Voltage Board (Photo) ↔ Common Relay Board (Photo)
Locked			
Unlocked			

(4) Pixel Defect

Refer to the below for diagnosis.

Note: Typical Symptom are only shown. Another Symptom might appear.

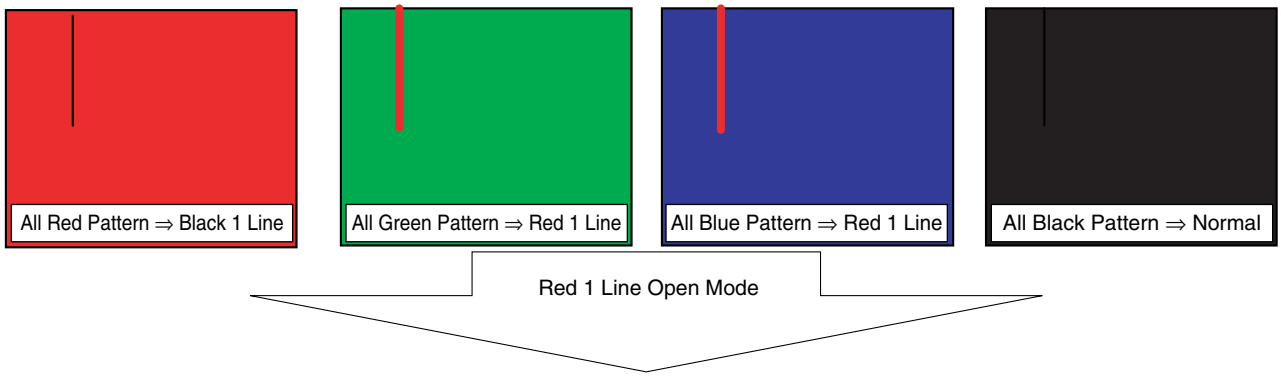
Symptom: Bright defect or dark defect
Cause/Countermeasure: PDP failure if out of spec. ⇒ Exchange PDP.



(5) Vertical Line

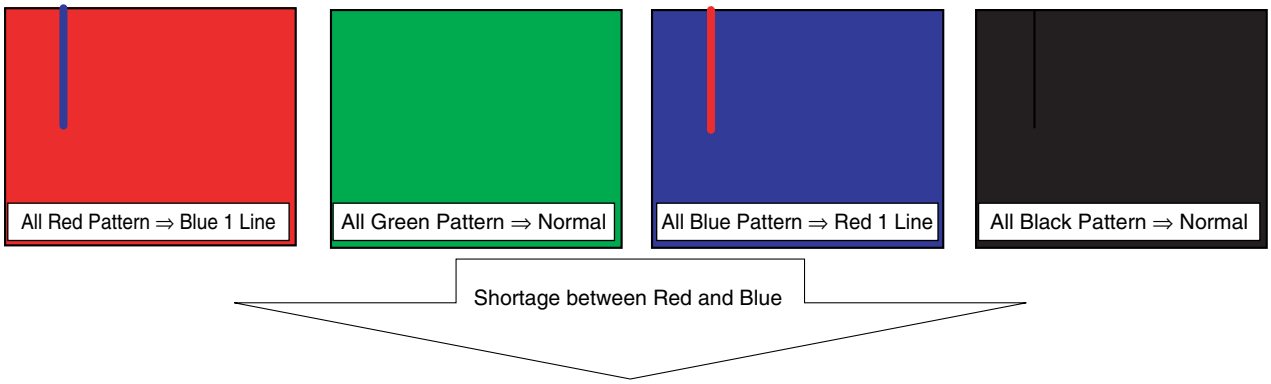
Note: Typical Symptom are only shown. Another Symptom might appear.

(5-1) **Symptom:** 1 vertical line (Open mode)


All Red Pattern ⇒ Black 1 Line
All Green Pattern ⇒ Red 1 Line
All Blue Pattern ⇒ Red 1 Line
All Black Pattern ⇒ Normal
Red 1 Line Open Mode

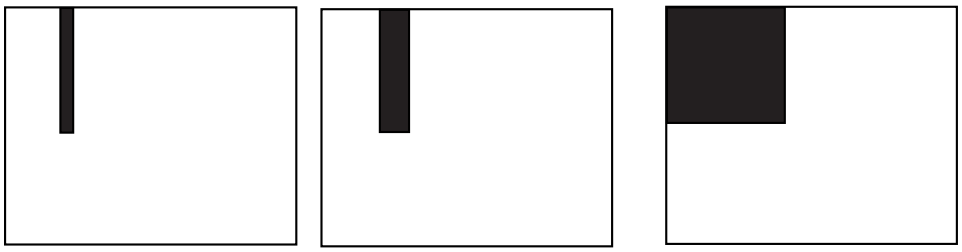
Cause/Countermeasure:
① Open or contact failure of Data flexible cable ⇒ Clean, Reconnect or exchange connector.
② Failure in Data IC ⇒ Exchange PDP.
③ Failure in panel ⇒ Exchange PDP.

(5-2) **Symptom:** 2 vertical lines (Short mode)


All Red Pattern ⇒ Blue 1 Line
All Green Pattern ⇒ Normal
All Blue Pattern ⇒ Red 1 Line
All Black Pattern ⇒ Normal
Shortage between Red and Blue

Cause/Countermeasure:
① Failure in Data IC ⇒ Exchange PDP.
② Failure in panel ⇒ Exchange PDP.

(5-3) **Symptom:** Vertical Line Block



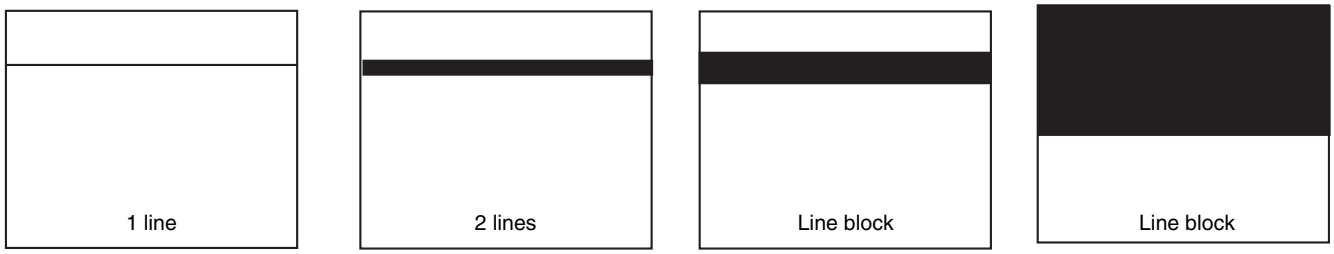
Cause/Countermeasure:
① Open or contact failure of Data flexible cable ⇒ Clean, Reconnect or exchange connector.
② Failure in Data IC ⇒ Exchange PDP.

Cause/Countermeasure:
① Open or contact failure of connector between Data Relay Board and Digital or High Voltage board ⇒ Clean, Reconnect or exchange connector.
② Open or contact failure of multiple Data flexible cable ⇒ Clean, Reconnect or exchange connector.
③ Failure in Data Relay Board ⇒ Exchange Data Relay Board.
④ Failure in multiple Data IC ⇒ Exchange PDP.

(6) Horizontal Line

Note: Typical symptom are only shown. Another symptom might appear.

Symptom: Horizontal lines



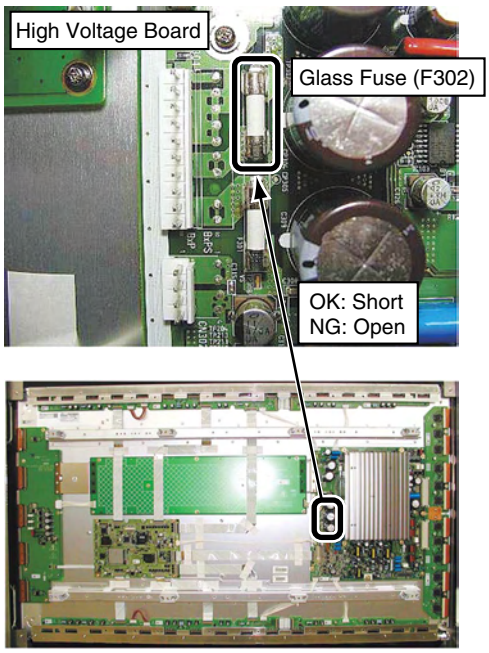
Cause/Countermeasure:
① Failure in Scan IC on Scan Relay Board ⇒ Exchange Scan Relay Board.
② Open or contact Failure of Scan Flexible Cable (CN201-CN204, CN205-CN208) at Scan Relay Board side
⇒ Clean, Reconnect or exchange connector.
③ Contact failure of connector between Scan Board and Scan Relay Board ⇒ Clean, Reconnect or exchange connector.
④ Short between terminals of Scan IC due to screw dust ⇒ Clean around the terminals.

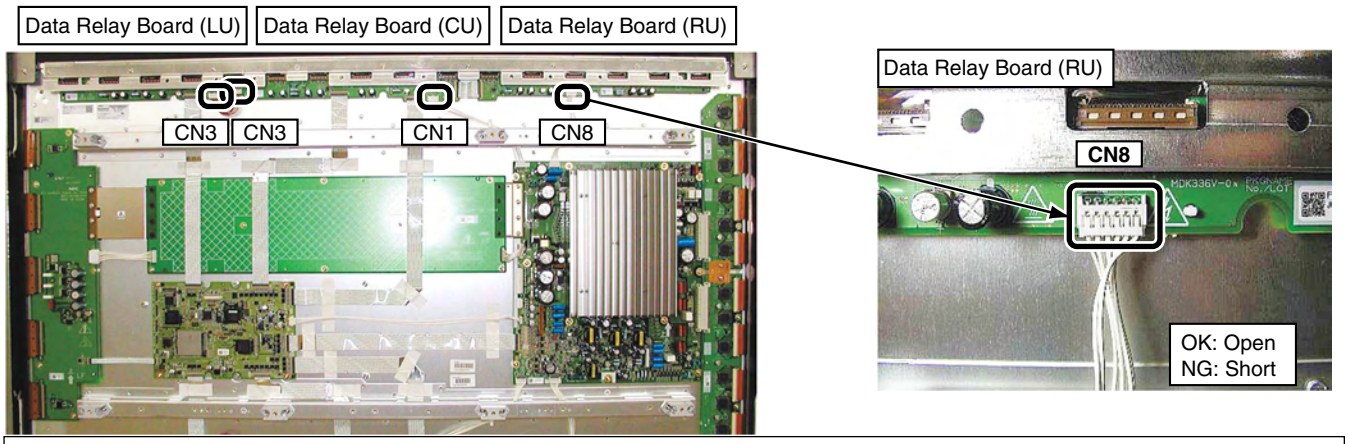
(7) Picture Defect

Note: Typical symptom are only shown. Another Symptom might appear.

(7-1) **Symptom:** No Picture (Priming flash).

Cause/Countermeasure:
① F302 open ⇒ Exchange High Voltage Board.





Cause/Countermeasure:

② If the connector CN8 disconnected from Data Relay Board (RU) is short-circuited between Pin 5 (or 6) and GND (Pin 3 or 4) ⇒ Data IC is broken ⇒ Exchange PDP.

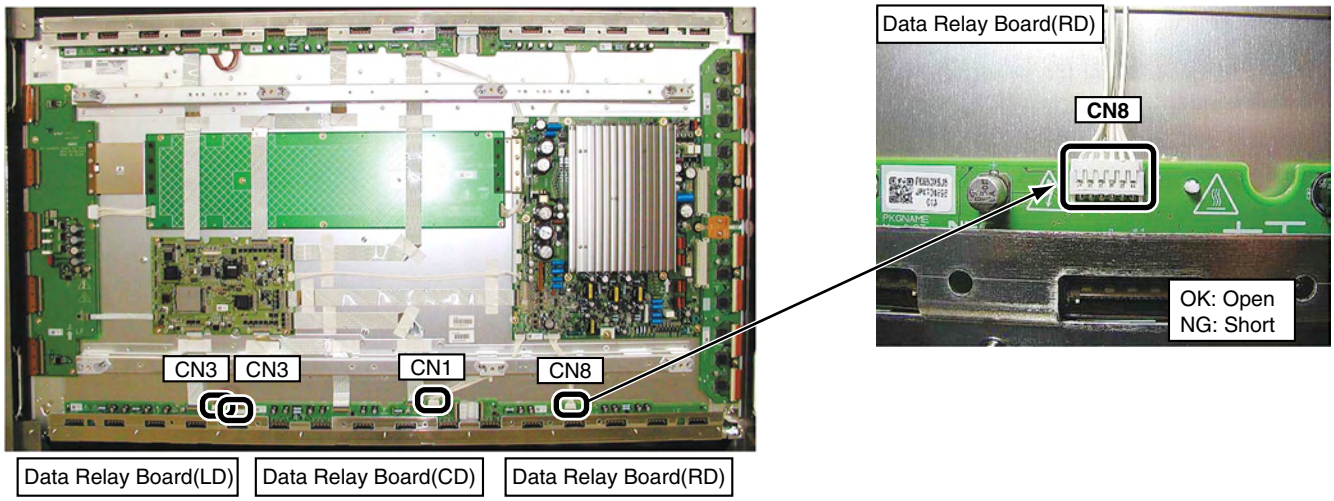
③ If the connector CN8 disconnected from Data Relay Board (RU) is short-circuited between Pin 1 (or 2) and GND (Pin 3 or 4) ⇒ Data Relay Board (RU) is failed ⇒ Exchange Data Relay Board (RU).

④ If the connector CN1 disconnected from Data Relay Board (CU) is short-circuited between Pin 5 (or 6) and GND (Pin 3 or 4) ⇒ Data IC is broken ⇒ Exchange PDP.

⑤ If the connector CN1 disconnected from Data Relay Board (CU) is short-circuited between Pin 1 (or 2) and GND (Pin 3 or 4) ⇒ Data Relay Board (LU) or (CU) is failed ⇒

a) If the connector CN3 disconnected from Data Relay Board (LU) is short-circuited between Pin 2 and GND (Pin 3 or 4) ⇒ Data Relay Board (LU) is failed ⇒ Exchange Data Relay Board (LU).

b) If the connector CN3 disconnected from Data Relay Board (CU) is short-circuited between Pin 2 and GND (Pin 3 or 4) ⇒ Data Relay Board (CU) is failed ⇒ Exchange Data Relay Board (CU).



Cause/Countermeasure:

⑥ If the connector CN8 disconnected from Data Relay Board (RD) is short-circuited between Pin 5 (or 6) and GND (Pin 3 or 4) ⇒ Data IC is broken ⇒ Exchange PDP.

⑦ If the connector CN8 disconnected from Data Relay Board (RD) is short-circuited between Pin 1 (or 2) and GND (Pin 3 or 4) ⇒ Data Relay Board (RD) is failed ⇒ Exchange Data Relay Board (RD).

⑧ If the connector CN1 disconnected from Data Relay Board (CD) is short-circuited between Pin 5 (or 6) and GND (Pin 3 or 4) ⇒ Data IC is broken ⇒ Exchange PDP.

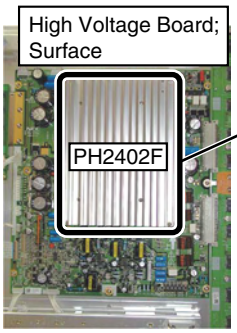
⑨ If the connector CN1 disconnected from Data Relay Board (CD) is short-circuited between Pin 1 (or 2) and GND (Pin 3 or 4) ⇒ Data Relay Board (LD) or (CD) is failed ⇒

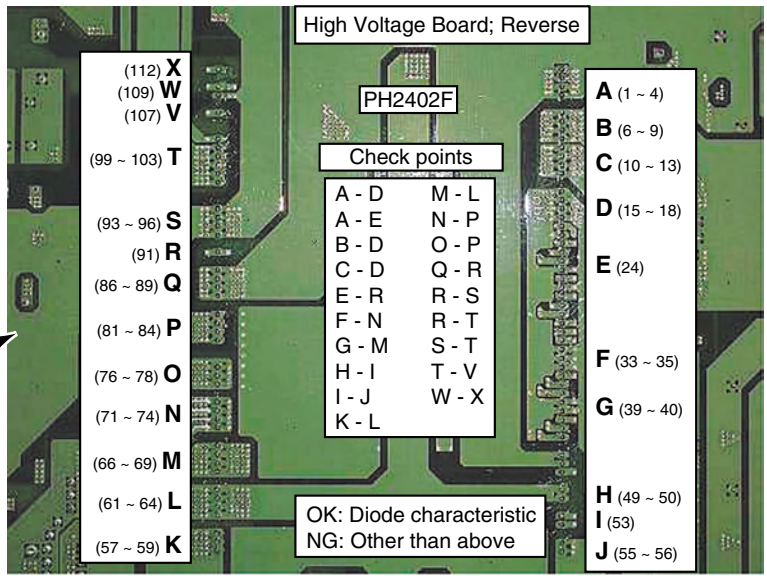
a) If the connector CN3 disconnected from Data Relay Board (LD) is short-circuited between Pin 5 and GND (Pin 3 or 4) ⇒ Data Relay Board (LD) is failed ⇒ Exchange Data Relay Board (LD).

b) If the connector CN3 disconnected from Data Relay Board (CD) is short-circuited between Pin 5 and GND (Pin 3 or 4) ⇒ Data Relay Board (CD) is failed ⇒ Exchange Data Relay Board (CD).

(7-2) **Symptom:** No Picture. (Priming doesn't flash if W-X terminals doesn't have Diode characteristic.)

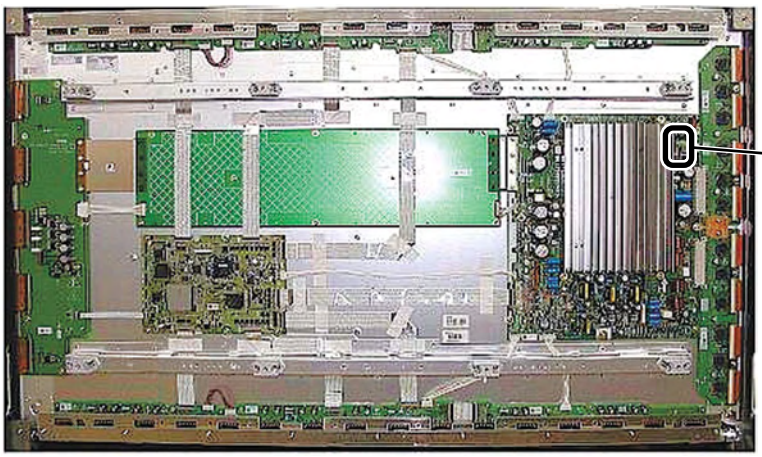
Cause/Countermeasure: No Diode characteristic
⇒ Exchange High Voltage Board.

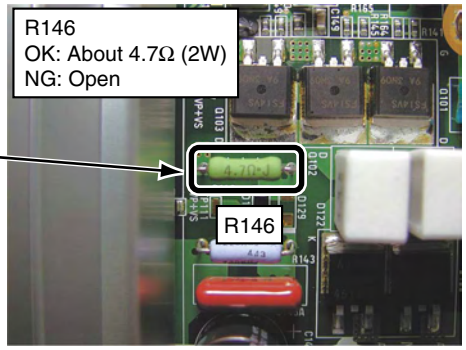




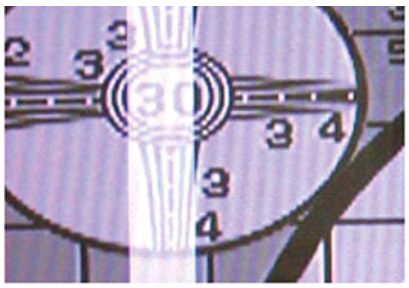
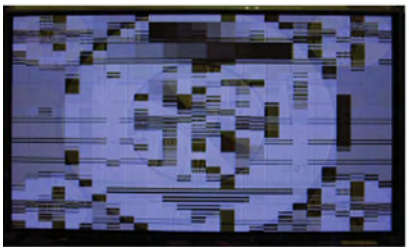
(7-3) **Symptom:** No Picture. (Priming doesn't flash.)

Cause/Countermeasure:
R146 open ⇒ Exchange High Voltage Board.





(7-4) **Symptom:** Abnormalities in a picture

One or more vertical bands, Multiple vertical lines	 Transparent vertical band	Out of synchronization or duplication
 Mosaic	Rectangular color shear, color discrepancy, shear in display	A number of lateral lines, Regular noise

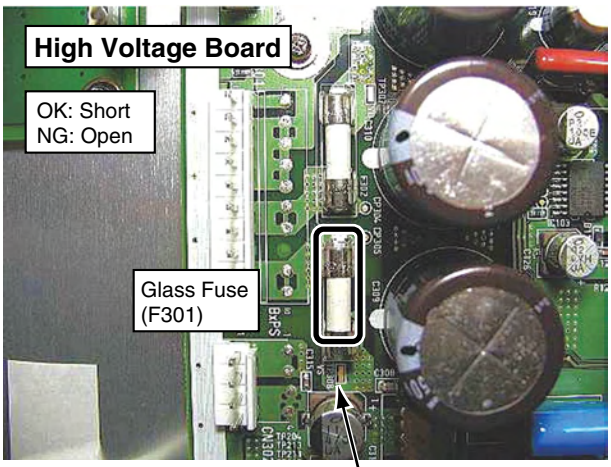
Cause/Countermeasure:
① Contact failure of connector adjacent to Digital Board or short circuit due to conductive obstacle ⇒ Clean or Reconnect
② Failure in circuit on Digital Board ⇒ Failure in Digital Board

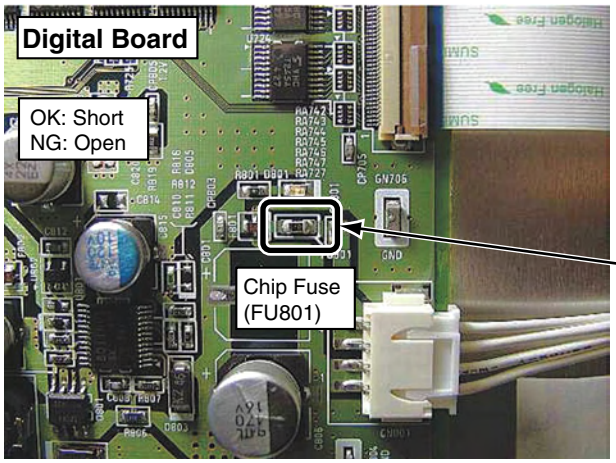
(8) Power off

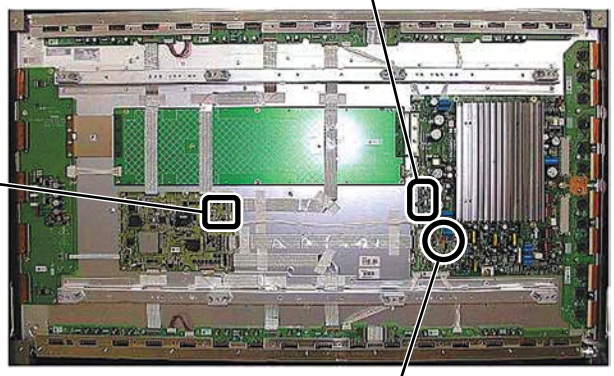
Note: Typical Symptom are only shown. Another Symptom might appear.

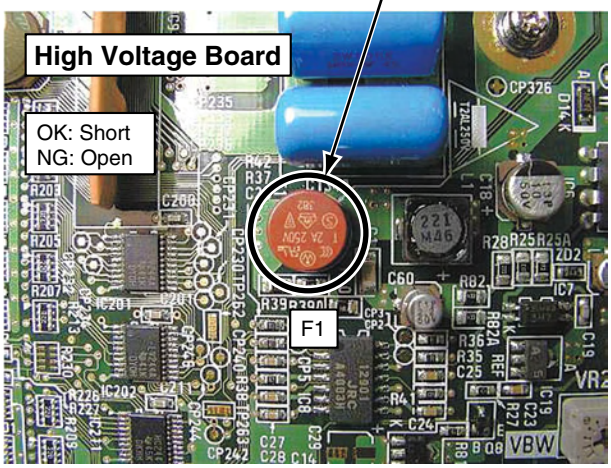
(8-1) **Symptom:** No Picture (Priming doesn't flash) ⇒ Power off

Cause/Countermeasure:
① F301 open ⇒ Exchange High Voltage Board.
② FU801 open ⇒ Exchange Digital Board.
③ F1 open ⇒ Exchange High Voltage Board.

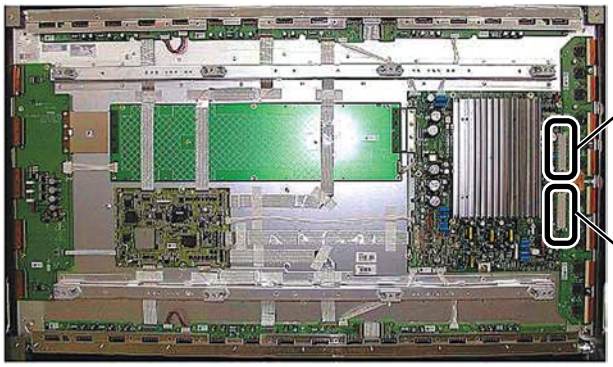


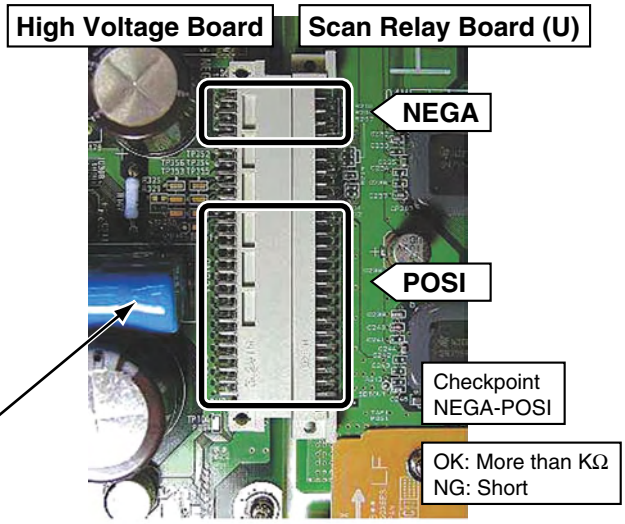


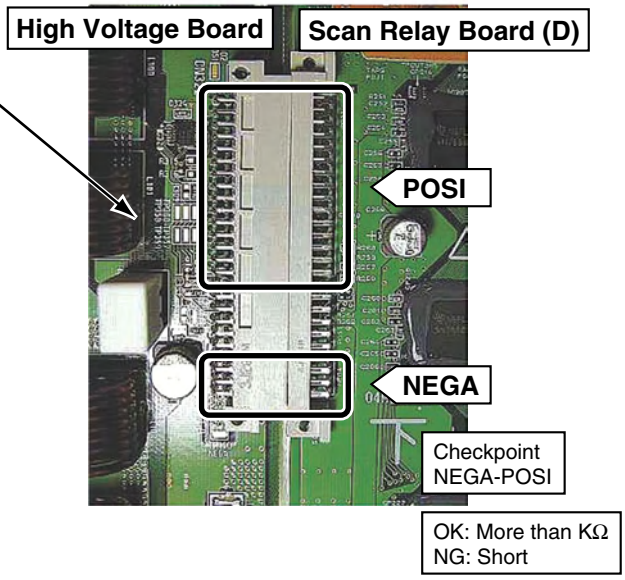




Cause/Countermeasure: If short-circuited, disconnect connector between High Voltage Board and Scan Relay Board and,
④ Short between NEGA-POSI on High Voltage Board ⇒ Exchange High Voltage Board.
⑤ Short between NEGA-POSI on Scan Relay Board (U) ⇒ Exchange Scan Relay Board (U).
⑥ Short between NEGA-POSI on Scan Relay Board (D) ⇒ Exchange Scan Relay Board (D).

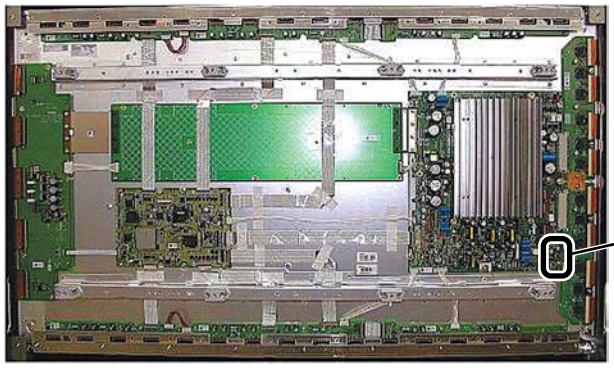


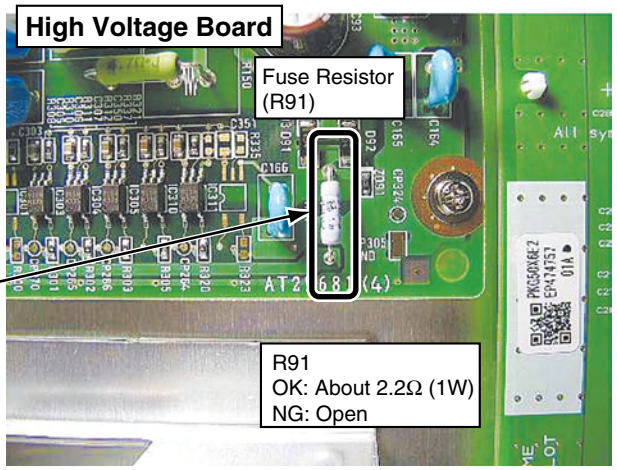




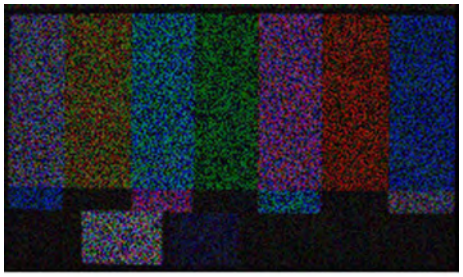
(8-2) **Symptom:** No Picture ⇒ Power off (Priming flash)

Cause/Countermeasure:
R91 open ⇒ Exchange High Voltage Board.





(8-3) **Symptom:** Failure in Writing ⇒ Power off

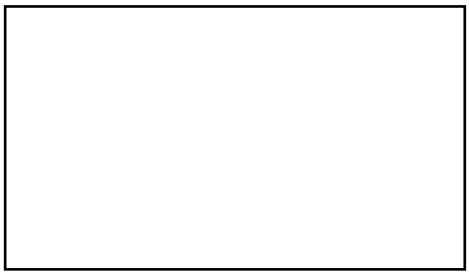


Dark and rough picture

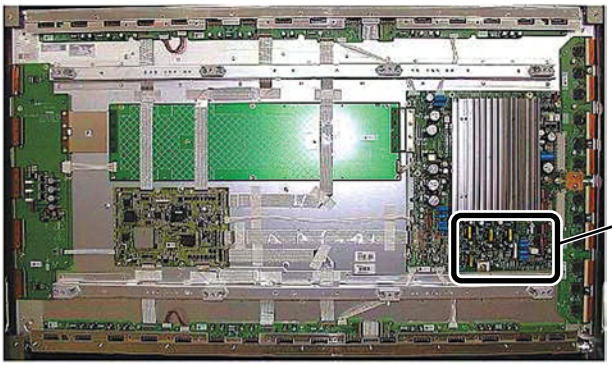
Many light spots on dark portion

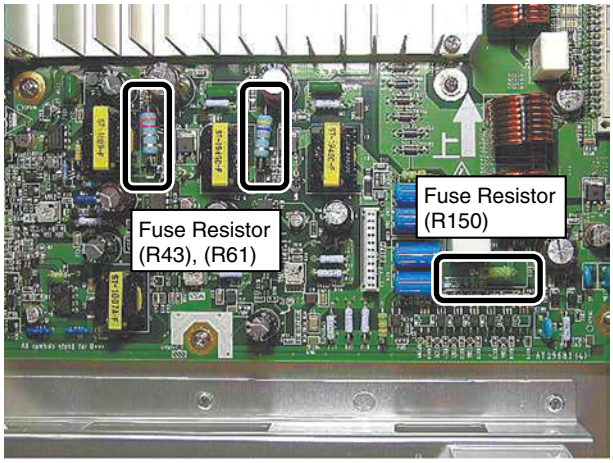
Cause/Countermeasure:
R43, R61 open ⇒ Exchange High Voltage Board.

(8-4) **Symptom:** White Pattern even in no signal ⇒ Power off



Cause/Countermeasure:
R150 open ⇒ Exchange High Voltage Board.





R43	OK	: About 3.3Ω (2W)
	NG	: Open
R61	OK	: About 4.7Ω (2W)
	NG	: Open
R150	OK	: About 4.7Ω (2W)
	NG	: Open

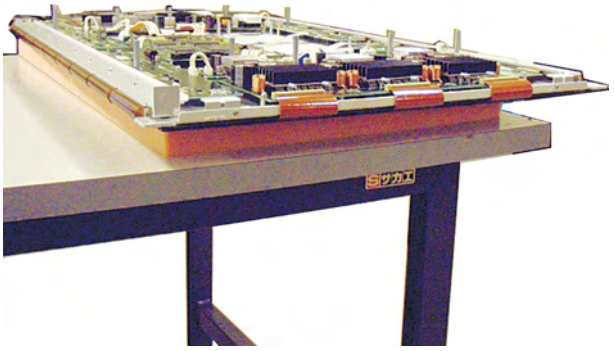
2. DISASSEMBLY

Follow the procedure below for diagnosis.

Procedure

Prepare tools.

Prepare Panel.



Caution:
Put cushion under failed PDP to cover general surface of glass before laying it's screen down.

(1) Disconnect connectors and cables on failed Board.

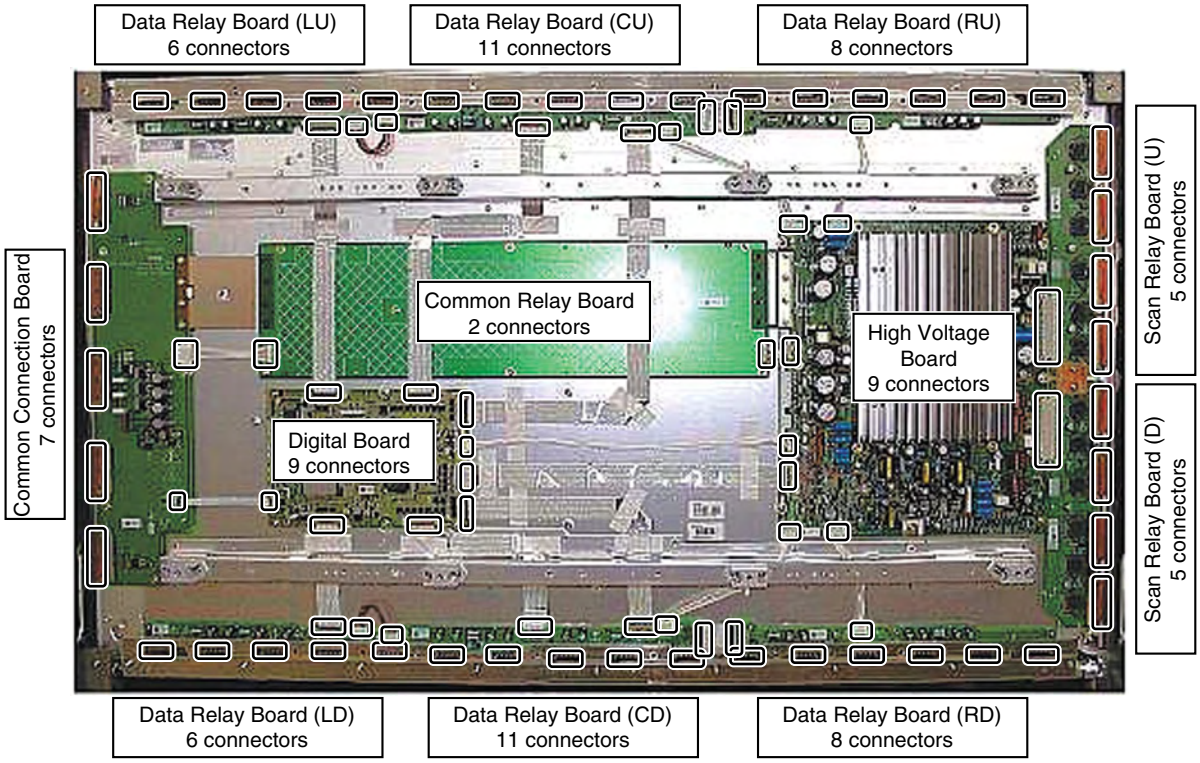
(2) Detach failed Board.

(2) Put on good Board.

(3) Connect connectors and cables.

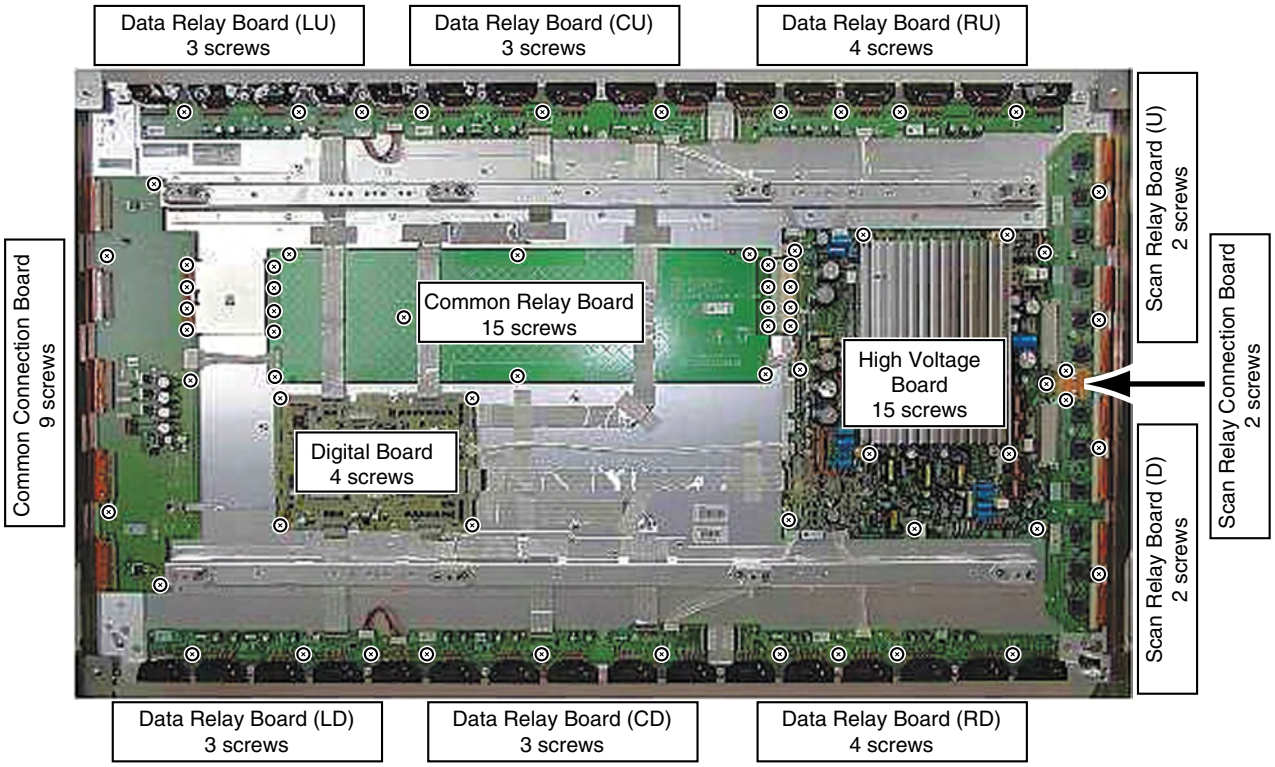
(1) Detach connectors and cables on failed Board.

Caution: Be careful of handling cables and connectors to avoid failure. Be sure to take off Heat Sink before detach Data Relay Board. See next Page for the procedure.



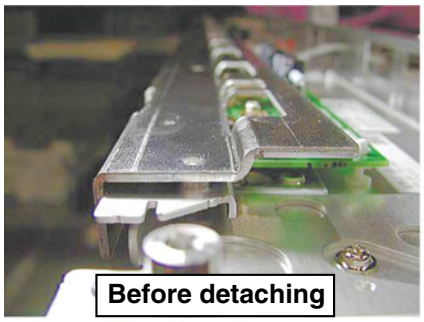
(2) Loosen screws of failed Board and put on good Board.

Caution: Be careful not to leave screwdriver, screw or screw dust. Be sure to take off Heat Sink before detach Data Relay Board. See the next page for the procedure.

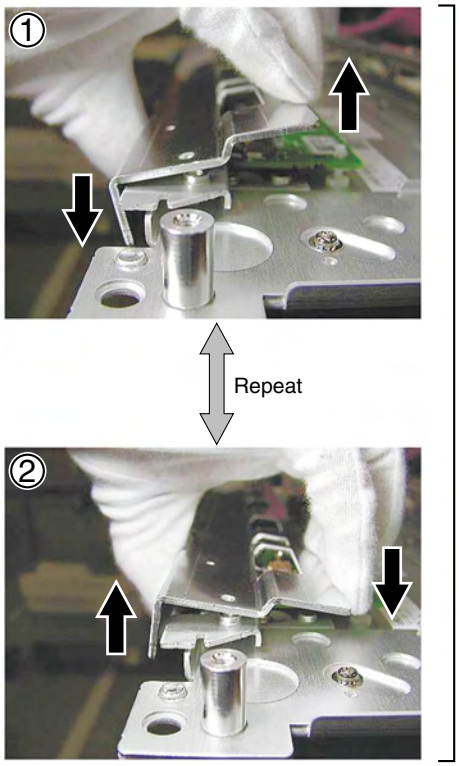


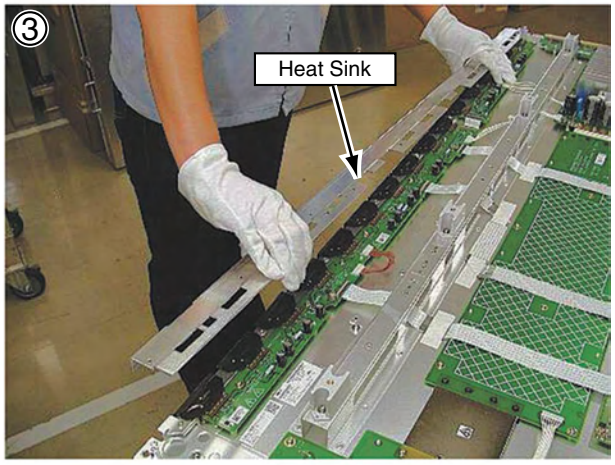
● **How to detach Heat Sink**

Caution: Stress on detaching easily breaks flex cable because Data TCP is sticking with Heat Sink (heat-conductive silicone sheet). (See Photo ④)

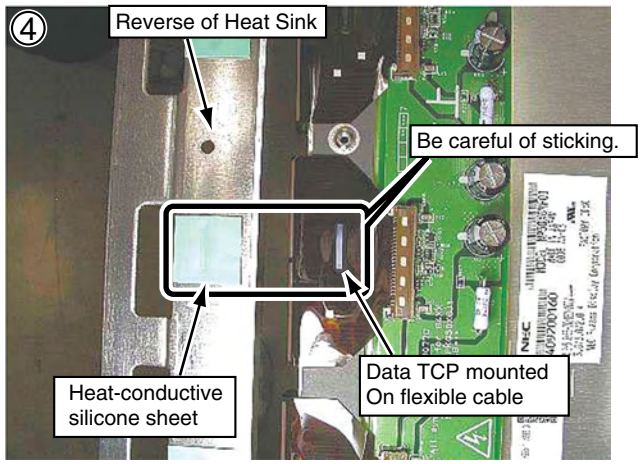


1. Slowly swing Heat Sink back and forth. (①, ②)
2. Gently lift Heat Sink up from Data TCP. (①, ②)
3. Repeat ① and ② until Heat Sink is taken off. (③)



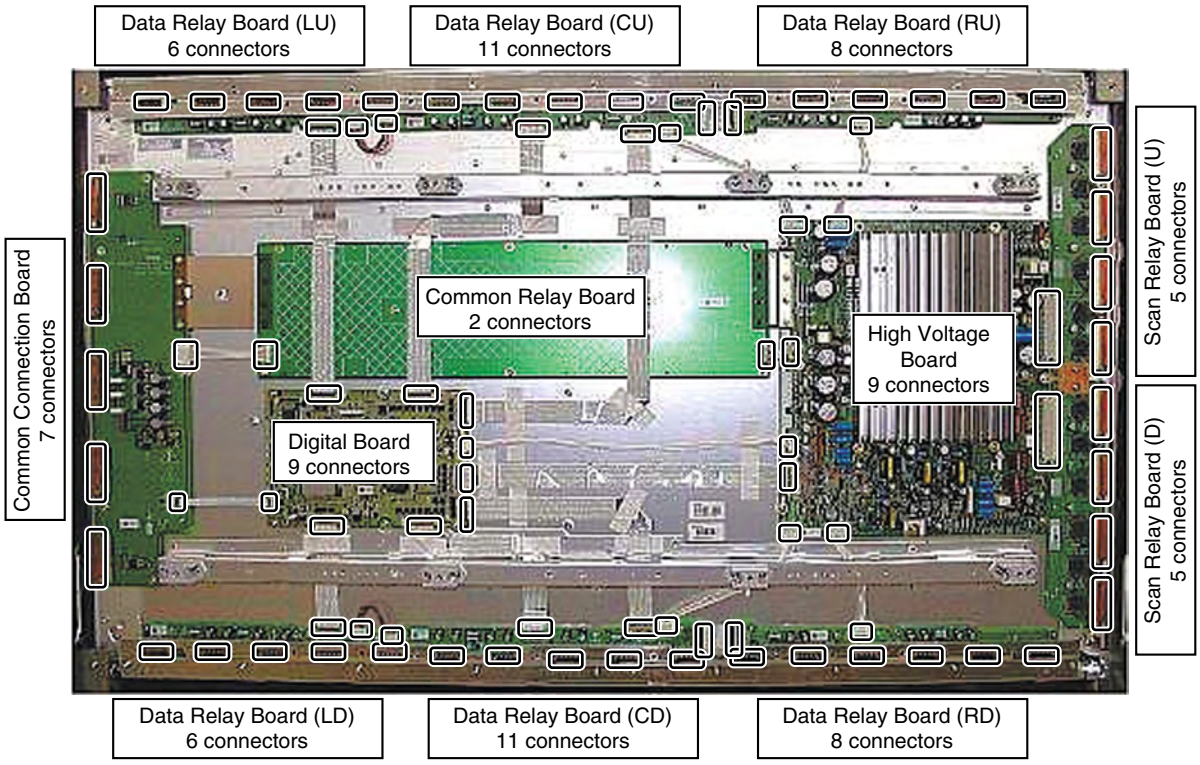


Heat Sink and Data TCP

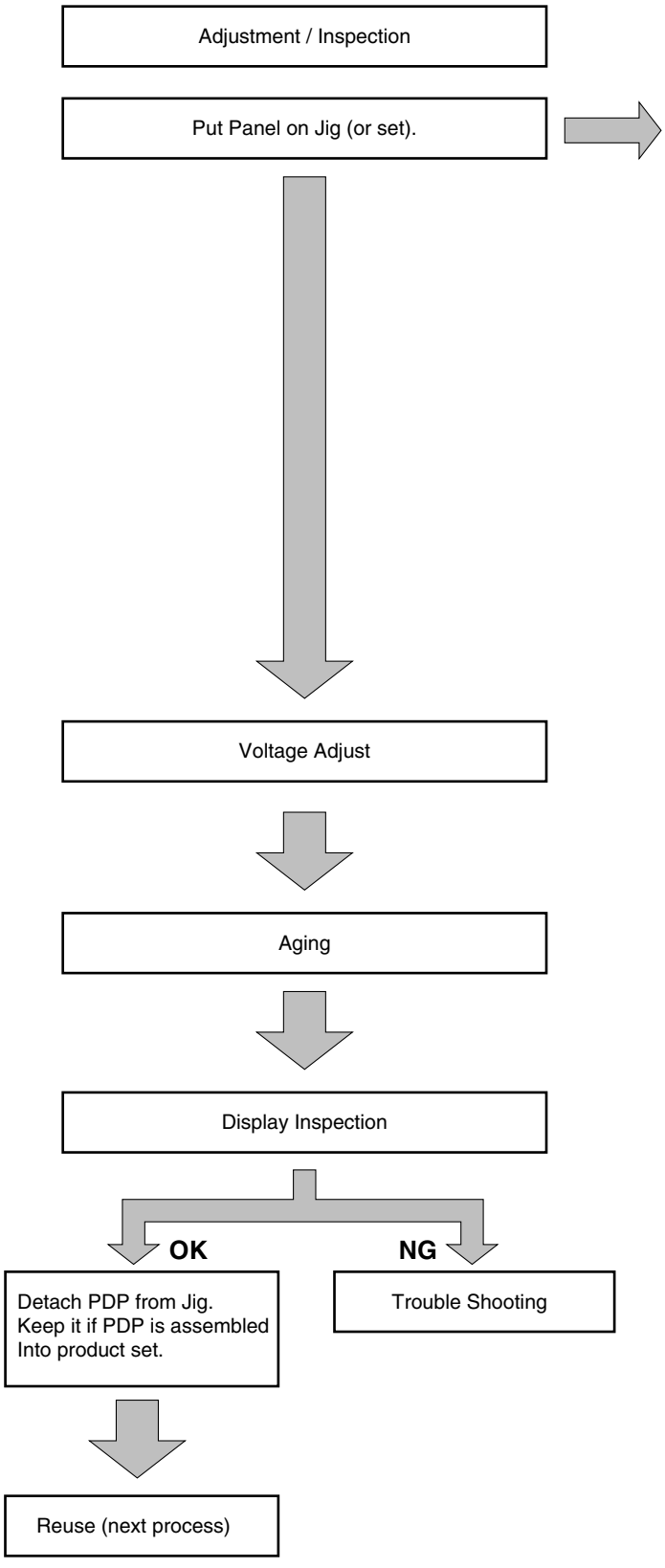


(3) Put on connectors and cables of good Board.

Caution: Be sure to put on Heat Sink after assembling Data Relay Board.



3. ADJUSTMENT



Example of mounting to jig

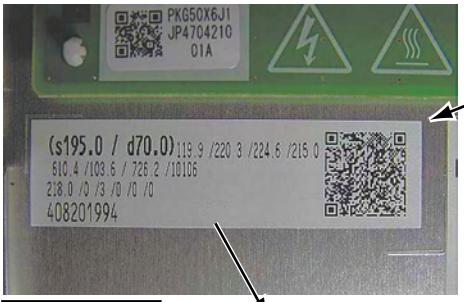
Caution:
Be sure to connect a Signal Cable and two Power Cables.
Otherwise High Voltage Board may be broken.

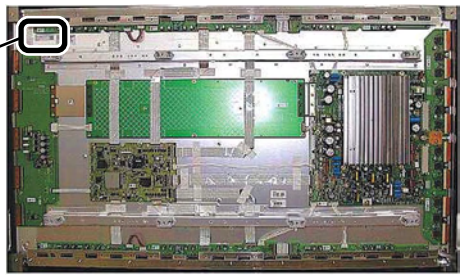
(1) Condition of Adjustment

Follow the procedure below.
(1-1) Conduct "(3) Adjustment of Vsw1 & Vsw2" and "(4) Adjustment of Vbw & Vp", when High Voltage Board is replaced.
(1-2) There is no need of adjustment if Board other than High Voltage Board.

(2) Voltage Label Check

Be sure to confirm voltages on Voltage label before conducting adjustment.





Example
Vbw : 119.9
Vsw1 : 220.3
Vp : 224.6
Vsw2 : 215.0

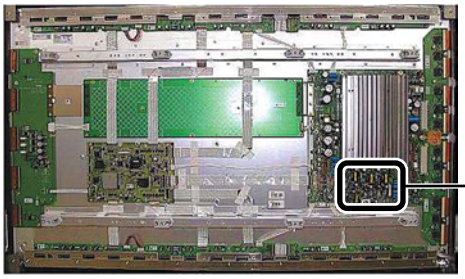
	Vbw	Vsw1	Vp	Vsw2
(s195.0 / d70.0)	119.9	/220.3	/224.6	/215.0
**********				
408201994				

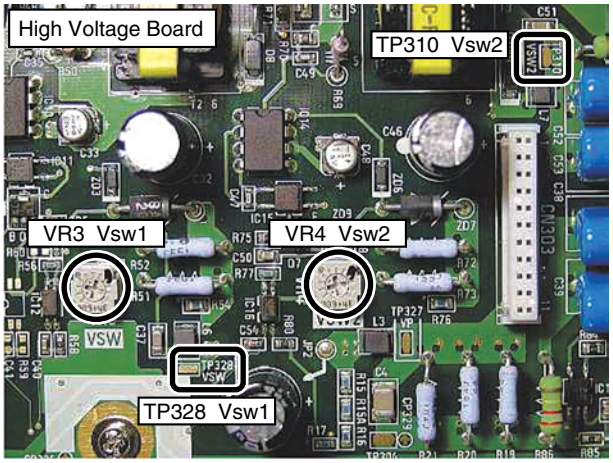
(3) Adjustment of Vsw1 & Vsw2

Caution: Use the nearest chassis for grounding.

Vsw1: Adjust VR3 so that the voltage between Test Pad (TP328) and GND becomes "Rated Voltage on Label ± 0.5V".

Vsw2: Adjust VR4 so that the voltage between Test Pad (TP310) and GND becomes "Rated Voltage on Label ± 0.5V".



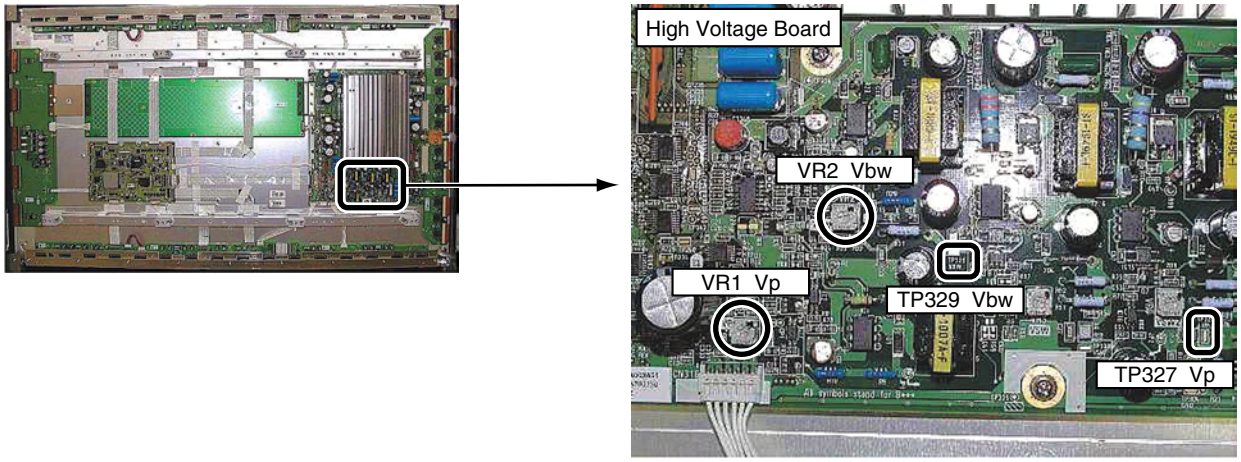


(4) Adjustment of Vbw & Vp

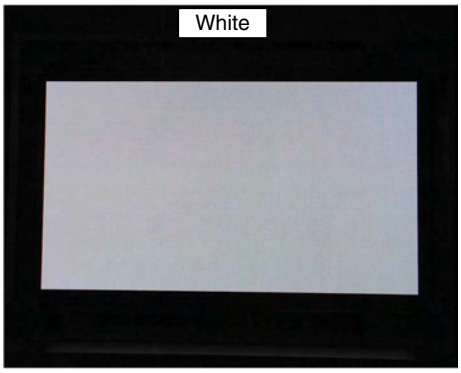
Caution: Use the nearest chassis for grounding.

Vp: Adjust VR1 so that the voltage between Test Pad (TP327) and GND becomes "Rated Voltage on Label ± 0.5V" .

Vbw: Adjust VR2 so that the voltage between Test Pad (TP329) and GND becomes "Rated Voltage on Label ± 0.5V".



(5) Aging

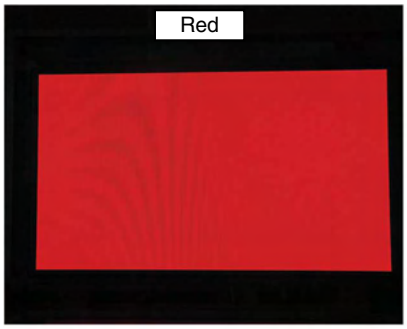


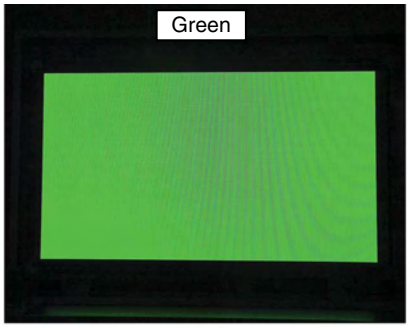
Conduct aging with White Pattern as shown left for at least 30 minutes.

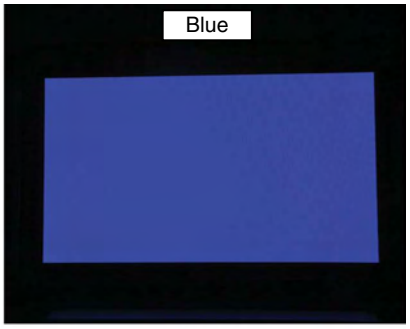
Caution:
Do not use a fixed pattern such as window or cross hatch for aging.

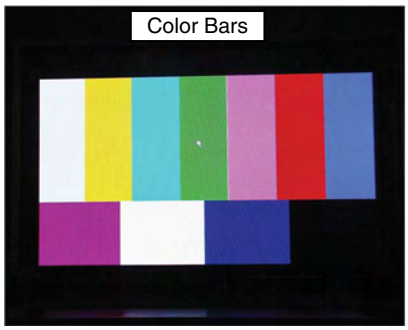
(6) Display Inspection

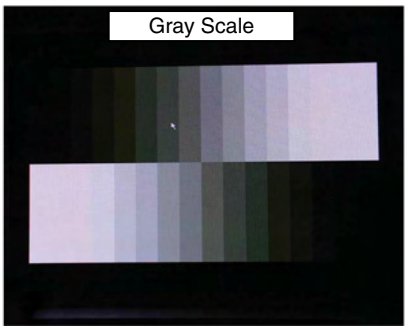
Confirm that every signal picture is good.







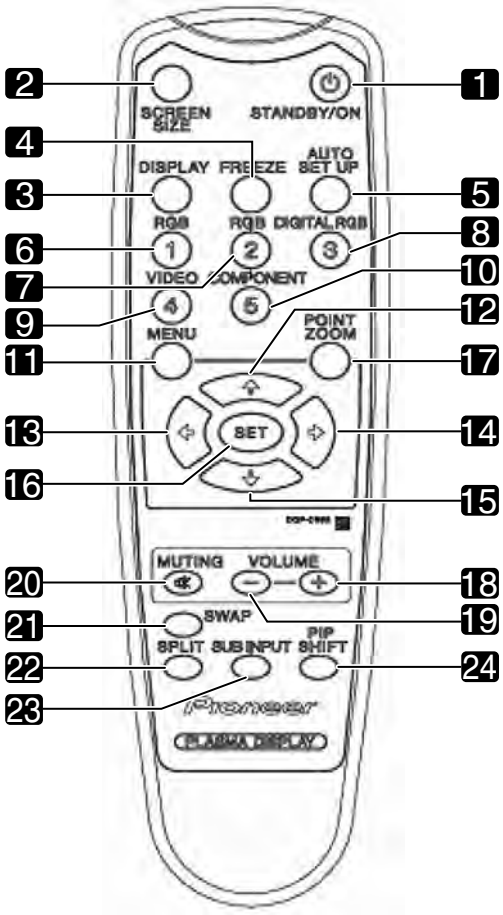




Caution:
PDP module may have instable picture display if electrified after a long storage.
Then conduct aging for about 2 hours.

10. PANEL FACILITIES

■ Remote Control Unit



1 STANDBY/ON
Switches the power on / Standby

2 SCREEN SIZE
Automatically detects the signal and sets the aspect ratio, in the order as shown in the below:
4:3 / FULL / WIDE / ZOOM / 2.35:1 / Dot by Dot

3 DISPLAY
Displays the source setting and screen size message on the screen / Disable displays

4 FREEZE
Freezes a frame from a moving image / Press again to cancel the function.

5 AUTO SET UP
Press this button to adjust Phase, Position and Clock automatically.

6 INPUT 1 (RGB)
Direct access of input 1 (RGB) source

7 INPUT 2 (RGB)
Direct access of input 2 (RGB) source

8 INPUT 3 (DIGITAL-RGB)
Direct access of input 3 (DVI-D) source

9 INPUT 4 (VIDEO)
Direct access of input 4 (CVBS, S-Video) source

10 INPUT 5 (COMPONENT)
Direct access of input 5 (YUV) source

11 MENU
Displays the menus screen / Leave the menus screen

12 UP ARROW
Navigate up in the OSM.

13 LEFT ARROW
Navigate left in the OSM.

14 RIGHT ARROW
Navigate right in the OSM.

15 DOWN ARROW
Navigate down in the OSM.

16 SET
Accept the selected item in the OSM.
Change the setting value of selected item which don't has the sub menu.
Return to the previous menu if current display menu is last sub menu.

17 POINT ZOOM
Press this button to select the 1.5, 2.0 and 2.5 ratio of zoom.

18 VOLUME +
Adjusts the audio volume up

19 VOLUME -
Adjusts the audio volume down

20 MUTING
Mutes or restores the sound volume

21 SWAP
In SPLIT mode press this button to swap the input picture.

22 SPLIT
Press this button to enter dual picture mode.
PIP / PBP / POP

23 SUB INPUT
In SPLIT mode Press this button to Selected dual picture second input.

24 PIP SHIFT
In SPLIT mode press this button to change the second input at four corner position to alternate.